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The extended effects of two instructional approaches, the Coordinated Basal Language Arts Approach and the Integrated Experience Approach to Communication, on pupils' language development at the second- and third-grade levels were investigated. Original subjects were 669 first graders who were pretested for readiness and intelligence. Of these, 396 second graders and 351 third graders were available for the final analysis. A 2x3x2 factorial design was used to test the effects of method, socioeconomic level, and sex, and the effects of method, mental age levels, and sex. Results indicated (1) higher second-year mean scores for pupils in the Integrated Experience Approach to Communication than for those in the Coordinated Basal Language Arts Approach, (2) a wider range of third-year raw scores and standard deviations for pupils in Integrated Experience Approach but no significant difference between methods, (3) a direct relationship between second- and third-year achievement and socioeconomic level and mental age, and (4) a distinct second- and third-year advantage in language areas of girls over boys. (BS)

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TWO APPROACHES TO READING INSTRUCTION

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June 1968

The research reported herein was performed pursuant to a contract with the Office of Education, U.S. Department of Health, Education, and Welfare. Contractors undertaking such projects under Government sponsorship are encouraged to express freely their professional judgment in the conduct of the project. Points of view or opinions stated do not, therefore, necessarily represent official Office of Education position or policy.

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SUMMARY

The major purpose of this continuation study was to examine the extended effects and outcomes of two instructional approaches, the Coordinated Basal Language Arts Approach and the Integrated Experience Approach to Communication, on pupils' language development at the second grade level and subsequently the third grade level in an urban setting. More specifically, the investigation involved two major problems at each grade level:

(1) An Analysis of the effects of Methods, Socio-economic Levels and Sex on pupil achievement

(2) An Analysis of the Effects of Methods, Mental Age Levels and Sex on pupil achievement

This study began in 1964 with a total pupil population, in the analyses, of 669 first graders, in twenty-four first grades, selected from 241 first grades in the Pittsburgh Public Schools. The first grade pupil population represented three distinct levels of the socio-economic strata as measured by the Hollingshead and Redlich scale, and had I.Q.'s ranging from 80 - 160. Both pupils and their teachers were randomly assigned to classes within either the Coordinated Basal Language Arts Approach or the Integrated Experience Approach to Communication. The 24 classes were equally designated to one or the other of the proposed methods in first grade.

In order to identify characteristics of the pupil population before the outset of instruction, numerous readiness test measures and an intelligence test were administered. Teacher characteristics, information about the school, information about the community, and other related pupil information was also gathered. At the outset, as tested with analysis of variance procedures, pupils in the Coordinated Basal Language Arts Approach had statistically significantly higher mean scores on certain aspects of reading readiness.

At the beginning of the research study and continuing throughout, teachers in both approaches attended in-service workshops. Outcomes for pupils in Language Learning were commonly charted in both approaches though instructional procedures, techniques, philosophies, and materials differed. Teachers in the Integrated Experience Approach to Communication were given complete teacher's guides to the approach for Level I prepared by Vilscek and Morgan while teachers in the Coordinated Basal

Language Arts Approach used Teacher's guides and other materials of the Scott Foresman Multi-Ethnic Basal Reading Series and "Listen, Speak, and Write" Basal Language Arts Series.

Final test results of achievements reflected that there were statistically significant differences between the pupils in the two methods at the close of 140 instructional days in first grade in word meaning, paragraph meaning, vocabulary, word study, reading attitudes, word recognition lists, mechanics of creative writing, and indexes of creative thinking. In every instance pupils in the Integrated Experience Approach had significantly higher mean scores.

The extension of this investigation to the second grade level and third grade level encompassed the school terms, 1965-66 and 1966-67. At the outset in second grade and third grade some preliminary pupil testing was done so that teachers might have a diagnostic base for initiating individualized instruction. Pertinent information was again gathered about teachers, pupils, the school, and the community.

Eighteen of the original twenty-four classes comprised the pupil populations in second grade and continuing on to third grade. There were 396 pupils in the population for analysis at the close of second grade and subsequently 351 pupils in the third grade analyses. Tests were performed to determine if population attrition might have a significant effect on the composition of the continuing population. Differences were not significant.

The second grade and third grade teachers in both instructional approaches ranged in their competencies from inadequate to superior. In both approaches, teachers attended in-service training workshops and were assisted by other supervisory suggestions or demonstrations. Second and third grade teachers were generally selected to participate because they taught either a second grade class or a third grade class in the building where a first grade group had been originally identified. Thus, teachers were new to the investigation at second grade levels and new to the investigation at third grade levels. It was obvious, too, that the quality of a teacher's performance was directly related to the supportive attitudes of her building principal and other supervisors.

Each of the teachers using the Coordinated Basal Language Arts Approach followed instructional techniques suggested in teacher's manuals for the Scott Foresman "Listen, Speak, and Write" language arts program and the Scott Foresman Multi-Ethnic Basal Reading Program. Teachers and pupils had access to library books, workpads, records, unit tests, filmstrips, and other instructional materials at second and third grade levels.

Teachers who employed the Integrated Experience Approach to Communication were provided with spiral curricular guides at the second grade level and at the third grade levels prepared by Vilscek and Morgan. These were designed to reinforce the teacher's understanding of the approach, to serve as a source of ideas for implementing it, and to ensure some methodological consistency across the nine classes. Other instructional materials included tape recorders, trade books, chart paper, self-directive and self-corrective materials, picture dictionaries, and workbook type material.

As nearly as possible comparable allottments of instructional time were maintained between the two approaches. Instructional Outcomes for all pupils in the study were also charted to serve as a guide for diagnostic placement and as an observation chart of growth toward language mastery.

Final pupil evaluations of language achievements at the close of the second and third years were made mid-May, 1966 and May, 1967. Included were the following instruments for measurement: Stanford Achievement Tests - Advanced Primary Battery; the University of Pittsburgh Rating Record of Supervisory Attitudes and Pupils' Social Integration - 1966 and 1967; the University of Pittsburgh Diagnostic Ratings of Language Outcomes for Second Graders, 1966 and Third Graders, 1967; Informally Devised Tests of Listening Comprehension Abilities at Second and Third Grade Levels; Minnesota Tests of Creative Thinking; the San Diego Pupils Inventory of Reading Attitudes, Grades 2 and 3; Pupil Inventories of: number of books read completely, number of books read partially, eagerness to read, and maturity of choices; the Gilmore Oral Reading Test; the Gates Word Pronunciation Test; the Fry Phonetically Regular Words Oral Reading Test; and the Restricted Stimulus Measure of written expression.

A "2 x 3 x 2" factorial design was employed to test the effects of of Method, Socio-economic Level, and Sex, and the effects of Method, Mental Age Levels, and Sex. All final data was processed and analyzed at the Computation and Data Processing Center, University of Pittsburgh, utilizing a model 7090 IBM Computer. Data was analyzed at the close of each year of instruction using a Post-Test Only Experimental Factorial

Design. Main effects and interaction hypotheses were as follows: Between Methods, Between Socio-economic Levels, Between Sexes, Method x Socio-economic Levels x Sex, Method x Socio-economic Levels, Method x Sex, Socio-economic Levels x Sex; and Between Mental Age Levels, Method x Mental Age Levels x Sex, Method x Mental Age Levels, and Mental Age Levels x Sex.

The following are some findings related to main effect and interaction hypotheses at each grade level.

A. Effects of Method

1. At the close of second grade, pupils in the Integrated Experience Approach to Communication had statistically significantly higher mean scores than pupils in the Coordinated Basal Language Arts Approach at the .01 level on science and social studies concepts, language understandings, language habits, language skills, maturity of book choices, and personal responses to language and at the .05 level in reading attitudes, spelling, and language. Pupils in the Coordinated Basal Language Arts Approach were reported to have read significantly more books completely. No statistically significant differences were apparent at the close of second grade in word meaning, paragraph meaning, word study skills, arithmetic computation, the Gilmore Oral Reading Test, tests of creative thinking, the Fry and Gates word pronunciation tests, or aspects of creative writing.

2. At the close of the third grade, no statistically significant differences were observed between the two methods on thirteen of the criterion variables considered. These included: pupil's reading attitude, word meaning, paragraph meaning, science and social studies concepts, spelling, word study skills, language, arithmetic computation, language understandings - habits - skills - personal responses, and listening comprehension. Significant differences were found on measures of creative thinking, oral reading, and creative writing at the .05 level.

B. Effects of Socio-Economic Levels

1. Statistically significant differences were noted between pupils in the three socio-economic levels at the end of second grade. Differences reported at .01 level were in: word meaning, paragraph meaning, science and social studies concepts, spelling, word study skills, language, arithmetic computation, language - understandings - habits - skills - and personal responses, the listening comprehension,

and number of books completely read. At .05 level significant differences were cited in pupil reading attitude, the originality index of creative thinking, eagerness to read, and maturity of choices. In every instance mean scores reflected that pupils in the high socio-economic levels achieve to a greater degree than those pupils from average socio-economic levels and that pupils in average socio-economic levels achieve to a greater degree than pupils from low-socio-economic levels.

2. At the close of the third year, significant differences were noted between the three socio-economic levels. Achievement rank in order from highest to lowest, again, were comparable to that of second grade level with high socio-economic groups scoring highest scores and low socio-economic groups generally achieving lowest scores. Differences at .01 level were reported on word meaning, paragraph meaning, science and social studies concepts, spelling, word study skills, language, arithmetic computation, language - understandings - habits - skills - personal responses, and listening comprehension.

C. Effects of Sex

1. At the close of the second year statistically significant differences were isolated between the sexes at .01 level on reading attitude, science and social studies concepts, spelling, eagerness to read, and maturity of choices and at the .05 level on the originality index of creative thinking, and language understandings. Girls had higher mean scores on each of the variables when significant differences were noted, except in science and social studies concepts where boys had higher mean scores.

2. Significant differences between the sexes at .01 level, at the close of Grade Three, were charted on the variables, pupil's reading attitudes and science and social studies concepts. Boys continued to maintain significantly higher achievement in science and social studies concepts while girls exhibited more positive reading attitudes.

D. Effects of Mental Age Levels

1. At the close of the second grade significant differences between pupils at designated mental age level stratifications were noted. At the .01 level there were significant differences between pupils in high, average, and low mental age classifications on word study skills and at .05 level on word meaning, science and social studies concepts, and language. In each instance where significant differences were reported,

pupils from high mental age levels had higher mean scores than pupils in average and low mental age levels. Pupils in average mental age levels, generally, had higher mean scores than pupils at low levels.

2. Significant differences between pupils in high, average, and low mental age categories at the close of Grade 3 are reported at .01 level on word meaning, paragraph meaning, word study skills, language, and arithmetic concepts. In every instance pupils from high mental age levels had higher mean scores than pupils from average mental age levels. Pupils in average mental age categories had higher mean scores than pupils in low mental age levels on four of the five variables cited. Pupils at low mental age levels had higher mean scores for language achievement than those pupils in the average mental age groups.

E. Interaction Effects

1. At the Close of Grade 2, significant interaction effects observed included:

a. Method x Socio-economic Level x Sex at .05 level on language achievement

b. Method x Socio-economic Level at .01 level on spelling and at .05 level on word study skills, language, arithmetic computation, and number of books read partially

c. Method x Sex at .05 level on paragraph meaning, language habits, language skills, and at .01 level on eagerness to read

d. Socio-economic Levels x Sex at .05 level on listening comprehension

2. At the close of Grade 3, significant interaction effects reported included:

a. Method x Socio-economic Levels at .05 level on language habits and skills

b. Method x Sex at .05 level on reading attitude and spelling

c. Socio-economic level x Sex at .05 on reading attitude

d. Method x Mental Age Levels x Sex at .05 level on spelling

e. Method x Mental Age Levels at .05 level on spelling and Word Study Skills

There were a number of conditions that were impossible to control in this study. Some were pupil attrition, the previous instruction of pupils who entered classes at second and third grade levels, and the initiation of variations of team teaching unevenly distributed between the approaches. The major conclusions drawn, therefore, are presented in view of the stated limitations and are summarized as follows:

1. When significant differences in achievement were reported at the close of the second year, pupils in the Integrated Experience Approach to Communication had higher mean scores than pupils in the Coordinated Basal Language Arts Approach.

2. Though no statistically significant differences between the methods were isolated at the end of the third year an investigation of raw score ranges and standard deviations reflect a much wider range from highest to lowest when pupils were taught through an Integrated Experience Approach.

3. At both the close of the second and third year pupils' achievement was directly related to their socio-economic level as well as their socio-economic level as well as their mental age levels. Generally, too, in language areas girls maintained a distinct advantage over boys in second grade and in third grade.

The most global recommendation the investigators might make would be that methods studies, such as this, in the future should reflect, more concisely, the individual pupil's growth patterns as well as class and group achievements. Only then can we more adequately project the values of approaches for individualized pupil instruction and language attainment.

I. INTRODUCTION

A. Extension of the Problem

A child's first grade experiences in learning to communicate are crucial to his future language successes. Of subsequent significance is his progress, particularly, in the second and third grades. Added language mastery at these levels serve as his readiness for continued achievement in communicating at intermediate grade levels, especially in content subject areas. As time passes, more occasions arise for his application of language learning in social settings in and out of the school environment.

If an instructional approach to pupils' language learning warrants the teacher's time and efforts, it must result in continued pupil achievement over an extended period. At the close of the first year of a cooperative research investigation between the University of Pittsburgh and the Pittsburgh Board of Public Education, the achievements of pupils within a Coordinated Basal Language Arts Approach and An Integrated Experience Approach to Communication were evaluated. Classroom observations were testimonies that the pupils were demonstrating desirable language learning outcomes in each of the two instructional approaches.

Statistically, through various procedures of data analysis, the progress of pupils in the Coordinated Basal Language Arts Approach was compared to the progress of pupils in an Integrated Experience Approach to Communication on twenty-six criterion variables at the close of first grade. Statistically significant differences in pupil achievement between pupils in the two approaches were noted at .01 or .05 levels in ten of the final achievement aspects considered. In every instance, pupils in an Integrated Experience Approach to Communication had statistically significantly higher mean scores than pupils in a Coordinated Basal Language Arts Approach.

In order to evaluate the effects of two more years of instruction on pupil achievement within an Integrated Experience Approach to Communication and a Coordinated Basal Language Arts Approach, the investigation was extended to second and third grades. An examination of the effects of method was limited only to those pupils who were in the original first grade population and continued to second grade, and subsequently third grade.

B. Review of Related Research

In reviewing the research related to the extension of this investigation, only those studies executed from 1964 to present will be cited. This review, thus, will constitute an extension of the review of related research cited in the final report of U.S.O.E. Project 2729, "Comparison of the Basal and the Coordinated Language Experience Approaches in First Grade Reading Instruction." (1)

Many conflicting findings and conclusions were voiced by the most current investigators of language oriented vs. basal or other instructional approaches. Since the directors of projects that were among the 27 U.S. Office of Education First Grade Reading Studies and Second Grade Reading Studies adhered to some common research goals, the findings of seven at the close of first grade and findings of four at the close of second grade were reviewed. These included studies by Harris and Serwer (4), Hahn (2), Kendrick (7), Sister Marita (11), McCanne (9), Stauffer and Hammond (12), and Vilscek and Cleland (14) at the close of first grade. Subsequent reports of projects continuing to the second year, as reviewed, included studies by Harris, Serwer, and Gold (5), Hahn (3), Stauffer and Hammond (13), and Kendrick and Bennett (8).

At the termination of one year of instruction, Harris and Serwer (4) report no statistically significant difference between pupils in language experience oriented approach and pupils in other approaches. In aspects of word study, paragraph meaning, word meaning, and reading attitudes pupils in other approaches had statistically significantly higher mean scores than pupils in language experience oriented instruction. Pupils participating in this investigation were selected from low-negro socioeconomic levels in New York City. Teachers were selected and assigned to experimental groups at random by administrators and supervisors in the public schools. Two experimental variations of the language experience approach, one with audio-visual supplementation and one without audio-visual supplementation were contrasted to basal approaches and phono-visual approaches.

Generally, at the close of the second year Harris, Serwer, and Gold (5) reported no statistically significant differences between the continued approaches or paired approaches as measured by the Metropolitan Upper Primary Battery Achievement sub-tests. Investigators further concluded that the teacher appeared to be a more important influence than any of the four approaches employed.

Hahn (2) reported that pupils in a language experience oriented approach had statistically significantly higher mean scores in word meaning and paragraph meaning on Stanford Achievement Test subsections than pupils in other instructional approaches at the end of first grade. A statistically significant advantage in word study was evident when pupils were taught through other approaches, namely basal with the traditional orthography and with the initial teaching alphabet. No statistically significant differences between pupils in the approaches were noted in vocabulary or reading attitudes. Pupils that participated were selected within a county school system. Local school administrators selected superior teachers who were then invited to select the approach they would use during the investigation. Hahn described the language experience approach in the Oakland Schools as including pupil dictation supplemented by the Murphy-Durrell, Speech to Print Phonics Program and the individualized reading of tradebooks. Teachers in the study also prepared guides to their reading curriculum.

The investigator, Hahn (3), reported at the end of the second year of his continuing study no statistically significant differences between pupils in language experience classes and pupils taught with i.t.a. on standardized tests administered. Pupils in language experience classes read significantly more books and wrote longer stories than pupils in i.t.a. classes. Comparisons between pupils in a language experience approach and a basal reader approach yield evidences of statistically significantly higher mean scores of children in language experience classes on word meaning, paragraph meaning, science - social studies concepts, spelling, word recognition, and number of books read. Pupils in the basal approach achieved higher mean scores on a creative writing mechanics ratio.

At the end of his first grade investigation Kendrick (7) reported no statistically significant difference between pupils in language experience and basal approaches on word meaning, vocabulary, word study, and reading attitudes. A statistically significant advantage in paragraph meaning was afforded to pupils taught through a basal approach. Participating pupils were selected within the San Diego County Public Schools. Teachers were selected in view of how they favored each of the instructional approaches and upon supervisory recommendation. Seventeen criteria were listed by Kendrick as guidelines for teachers employing the language experience approach.

Kendrick and Bennett (8) extended the investigation and reported their findings at the close of the second year. Generally, statistically significant differences between pupils in approaches were noted on twenty-three of the final criterion variables. On twelve of the variables pupils in language experience approaches demonstrated statistically significantly higher scores while on eleven of the final variables, pupils in the basal approach had significant advantages.

In her study of pupils within a whole-class type organization learning through a language experience approach and pupils within a basal approach, Sister Marita (11) reported that there were no statistically significant differences between pupils in paragraph meaning, vocabulary, and reading attitudes. Statistically significant advantages were afforded in word meaning and word study to pupils in language experience classes as compared with pupils in basal reader classes. Pupils within suburban areas participated in this study. Teachers were selected by district supervisors. A teacher's assignment to a particular method generally reflected the prevailing program within a school or the teacher's willingness to change methods. Teachers within language experience classes set their own instructional guidelines, prepared a curricula, and employed techniques that would ensure high degrees of pupil interest and skills mastery.

In almost complete contrast, McCanne (9) reported that pupils in other approaches had statistically significantly higher mean scores in word meaning, vocabulary, word study, and reading attitudes than pupils in the language experience approach. No statistically significant difference was noted between pupils in the approaches on vocabulary mastery. Pupils in this investigation all came from Spanish speaking homes. Teachers applied for participation in the research project and were then assigned at random to experimental groups. Five units, prepared by Dr. Allen, were modified and employed as instructional guides for teachers using the language experience approach.

Stauffer and Hammond (12) reported statistically significant advantages for pupils on word meaning and paragraph meaning in language experience classes as compared to pupils in the basal approach. No statistically significant differences were evident between pupils in the approaches on vocabulary, word study, and reading attitudes at the close of the first year. This investigation took place in a rural setting. Teachers were assigned to language experience groups because they displayed an earlier competency with the approach. Adequacy in instructional practices of teachers was ensured through a concentrated weekly inservice supervision program. Pupils in language experience classes were taught through use of dictated stories, individualized reading of tradebooks, and with basal readers for re-inforcement of word attack skills.

At the close of the second grade, Stauffer and Hammond (13) reported statistically significant advantages for pupils taught through the language experience approach as compared to pupils taught through basal approaches with one exception, an arithmetic sub-test for boys on the Stanford Achievement Tests. The investigators, thus, concluded that standardized as well as non-standardized test results yielded evidence of the superiority of the language experience approach extended to second grade.

In their comparisons between pupils in a Coordinated Basal Language Arts Approach and pupils in an Integrated Experience Approach to Communication, Vilscek and Cleland (14) reported statistically significant differences at the end of first grade. Pupils in an Integrated Experience Approach had higher mean scores in word meaning, paragraph meaning, vocabulary, word study, reading attitudes, word recognition lists, mechanics of creative writing, and indexes of creative thinking. Participating pupils were selected to represent three levels of the socio-economic strata in the city of Pittsburgh. Teachers as well as schools and pupils were selected and assigned to methods by supervisory personnel of the Pittsburgh Board of Public Education. Teachers employing the Integrated Experience Approach were provided with complete curriculum guides prepared by Vilscek and Morgan. Guides contained complete instructional units.

In order to cross-evaluate studies that were language experience oriented, Bond and Dykstra (1) reported analysis of data in studies by Hahn, Kendrick, Stauffer and Hammond, and Vilscek and Cleland. Analyses were presented in view of class means and individual means on four sub-tests of the Stanford Achievement Tests at the end of first grade. In every instance considering both class means and individual means, pupils in the Integrated Experience Approach had significant advantages over pupils in a Coordinated Basal Language Arts Approach in the study by Vilscek and Cleland.

Pupils in the Stauffer and Hammond Project had statistical advantages in word meaning and paragraph meaning when taught through a language experience approach. No statistically significant differences were evident in vocabulary or word study as cited by Bond and Dykstra (25).

When individual means for word meaning in the Hahn investigation were evaluated by Bond and Dykstra (26), a significant advantage was noted for pupils in a language experience approach. No other statistically significant differences were found on the three other sub-sections of the Stanford Achievement Test.

In contrast, Bond and Dykstra (27) reported a statistical advantage for pupils taught through a basal approach in the Kendrick study on paragraph meaning when both class and individual means were examined. No statistically significant differences between pupils in the language experience classes and basal classes were evident on word meaning, vocabulary, and word study.

In evaluating the contrasting outcomes of these investigations, the reader is cautioned to carefully examine the multitude of differences between and among the studies reviewed. The relevancy of findings in each of these investigations is dependent upon the similarity of teachers, pupils, schools, and defined approach to which one is generalizing.

C. Definition of Terms

1. Coordinated Basal Language Arts Approach -- the method of language arts instruction that includes practices, procedures, and materials suggested in the new multi-ethnic Scott Foresman basal reading program and basal language arts program.

2. The Integrated Experience Approach to Communication -- the method of language arts instruction initiated through pupils' experiences. Pupils' dictated stories and written expression are key materials through which instruction is accomplished in reading. Various other language activities as well as practices, procedures, and materials are suggested in the curriculum guide for teachers prepared by Vilscek and Morgan.

3. Acts or Arts of Communication -- the six processes of language that include: perceiving, listening, speaking, non-vocal signaling, writing, and reading. In perceiving, listening, and reading pupils employ appropriate sensory receptors. To transmit feelings or ideas, speaking, non-vocal signaling, and writing serve as media.

4. Channels of Language -- those channels of transfer that fuse learnings in the arts of communication. Included are: Perceptual-Conceptual Development, Physiological Aspects, Mechanics, Functional Linguistics, Comprehension, Study Techniques, and Aesthetic or Cultural Appreciations.

   a. Perceptual-Conceptual Development -- processes that involve sensing, acquiring a stock of percepts, and then generalizing about perceptions to form concepts.

b. Physiological Aspects -- those processes that result in visual acuity, auditory acuity, kinesthetic acuity, appropriate posture, and appropriate non-vocal signaling.

c. Mechanics -- those processes related to form, format, readability, articulation, or language analysis. Included are: word recognition, handwriting facility, clarity in pronunciation, spelling, punctuation, and capitalization.

d. Functional Linguistics -- those processes that lead to unlocking how words work in view of their placement in a sentence, the amount of vocal stress placed on each, degrees of pauses between them, the pitches used in utterance, and how differently people in various parts of the country make them sound.

e. Comprehension -- those specific comprehension skills and abilities such as noting main ideas, following directions, locating facts, noting sequence, etc.

f. Study Techniques -- processes that facilitate learning ease in all the language arts. Included are: knowing how to use reference materials, skill in selecting interesting materials to be shared with a listening audience, or the habit of proofreading all personally written products.

g. Aesthetic and Cultural Appreciations -- those processes through which pupils acquire a sensitivity to beauty and a respect for literary heritage.

5. Understandings -- the knowledges acquired that ensure accurate language application.

6. Applications -- those language habits, skills, and abilities that reflect maturity in communication.

7. Personal Responses -- the attitudes, actions, feelings, and appreciations reflected while communicating or toward language.

8. Socio-economic Level I -- those children from upper socioeconomic levels with an Index of Social Position score of 20 - 58.

9. Socio-economic Level II -- those children from middle socioeconomic levels with an Index of Social Position score of 59 - 96.

10. *Socio-economic Level III* -- those children from lower socio-economic levels with an Index of Social Position score of 97 - 134.

11. *Mental Age Level 1* -- those pupils within the top third on the Pintner-Cunningham Intelligence Test raw scores.

12. *Mental Age Level 2* -- those pupils within the middle third on the Pitner-Cunningham Intelligence Test raw scores.

13. *Mental Age Level 3* -- those pupils within the lowest third on the Pitner-Cunningham Intelligence Test raw scores.

D. Objectives of the Study

The *Major Objective* of this study was to test the following hypothesis:

> There is no statistically significant difference between the effects and outcomes of two instructional methods, the *Coordinated Basal Language Arts Approach* and the *Integrated Experience Approach to Communication* when extended and applied at the second and third grade levels.

More specifically, the aims of this study were as follows:

1. To evaluate instructional effects and outcomes in view of the following independent pupil variables: sex, mental ability, socio-economic level, and social integration
2. To evaluate instructional effects and outcomes in view of the following independent teacher variables: effectiveness, academic preparation, and teaching experience
3. To list as clearly and completely as possible the instructional outcomes for all pupils in terms of language understandings, habits and skills, attitudes and/or appreciations.
4. To refine and extend diagnostic procedures for evaluating pupil progress toward the listed instructional outcomes
5. To determine if there were significant differences between pupils, as measured by standardized or other instruments at the end of the second and third years of instruction on the

following variables: listening, oral and silent reading, written expression, creativity, and social integration

6. To employ techniques for examining significant differences in the maturity of pupil's reading interests and their desire to read

This continuing study of second and third grade pupils' language development in an urban setting included the testing of main effects and interaction hypotheses between methods, between socio-economic levels, between mental age levels, between sexes, and between the various combinations of effect interactions. Both univariate and multi-variate analyses were completed and are subsequently reported.

II. METHODS

A. General Plan for Extension of the Study at Second Grade Level and Continuing at the Third Grade Level

The sequence of procedures in this extension of an examination of two instructional approaches in reading and the language arts was comparable at second and third grade levels. Specifically, this sequence may be outlined as follows:

1. In September, 1965 and September, 1966, continuing treatment groups were identified, described, and assigned to participating teachers.

2. Preliminary pupil evaluations were made during the first two weeks of the second grade school term and the third grade school term through use of the following instruments:

   a. Kuhlmann-Anderson Intelligence Test; Form A at second grade level and Form B at the third grade level

   b. Gates Primary Reading Test at second grade level and the Gates Advanced Primary Reading Test at the third grade level

3. The instructional terms began the first weeks of September, 1965 and 1966 and extended for approximately one year from previous first grade termination date to May 1966 and May 1967.

4. A preliminary three day workshop for participating teachers, supervisors, and staff was held at the beginning of the month of September, 1965 and September, 1966. Subsequently, bi-monthly and monthly inservice meetings were scheduled throughout the extension of this investigation. Supervision and consultation services were equally made available for teachers in both experimental approaches during each school term.

5. Analyses were performed within each experimental method to determine whether or not the pupil population continuing to second grade and subsequently third grade was representative of the total first grade population in the original sample.

6. Additional related teacher, pupil, school, and community information considered included:

a. Teacher: Age, Sex, Highest Degree, Teaching Certificate, total years of teaching experience, number of years of second grade (or third grade) teaching experience, marital status, number of children, number of days absent, rating of competence, and teacher attrition.

b. Pupil: attendance, first grade readiness, first (or second grade) achievements in the language arts, and socio-economic status rating as measured by the Hollingshead and Redlich Index of Social Position.

c. School: length of school day, length of school year, library facilities, class size, average supportive instructional time in other language arts.

d. Community: median number of years of education completed by adults living within the school's community, median income in the community, population of the community in which the school is located, and type of community.

7. Prior to the outset of the instructional program at second and third grade levels, language learning outcomes were considered by teachers as charted. Expected outcomes were modified, refined, and redesignated within units of teacher's instructional guides for Grade 2 and Grade 3. Thus, teachers in both experimental treatments were exposed to learning objectives for pupils, supported by teaching guides prepared commercially or by Vilscek and Morgan.

8. Teachers, too, were given continued assistance in both experimental treatments with techniques for diagnostic assessments of pupils' strengths and weaknesses. In both approaches teachers were guided in the interpretation and evaluation of initial test measures. Teachers in the Coordinated Basal Language Arts Approach consistently employed experimental diagnostic tests that accompanied the commercially published materials. Teachers employing an Integrated Experience Approach to Communication were directed to specific sections of diagnostic suggestions provided in their teacher's guides and to the use of the Botel Informal Inventory of Reading Skills.

9. In both experimental approaches, instruction was individualized to the best ability of each teacher and reflected the teacher's skills in formal and informal diagnostic assessment.

10. Final pupil evaluations at the close of the second and third years of the continuing study were made during a two-week period, mid-May, 1966 and May, 1967. Included were the following standardized and informally devised measures:

a. Stanford Achievement Test, Advanced Primary Battery II, Forms X and W for Grades 2 and 3

b. University of Pittsburgh Rating Record of Supervisory Attitudes and Pupils' Social Integration, 1966 and 1967

c. University of Pittsburgh Diagnostic Ratings of Language Outcomes for Second Graders, 1966 and Third Graders, 1967

d. Informally Devised Test of Listening Comprehension Abilities at Second and Third Grade Levels

e. Minnesota Tests of Creative Thinking: Task 3: "Product Improvement", Abbreviated Form VII for Grades 2 and 3; Task 2: "The Circle Tests" for Grade 2; and Task 1: "Figure Completion" for Grade 3

f. San Diego Pupils Inventory of Reading Attitudes, Grades 2 and 3

g. Pupil Inventories of: number of books read completely, number of books read partially, eagerness to read, and maturity of choices (Grade 2)

h. Gilmore Oral Reading Test, Form A (only administered to the sub-sample population identified at Grades 2 and Grades 3)

i. Gates Word Pronunciation Test, Form I (only administered to the sub-sample population identified at Grade 2)

j. Fry Phonetically Regular Words Oral Reading Test (only administered to the sub-sample population identified at Grade 2)

k. Restricted Stimulus Measure of the following aspects of written expression: mechanics ratio, total words spelled correctly, number of running words, number of different words, number of polysyllabic words (Grade 2 and 3)

11. All standardized preliminary evaluative instruments and final informal evaluative instruments were scored by the research staff. Participating teachers were not asked to score any of the measurement instruments.

B. Pupil Population Continuing to Second and Subsequently Third Grade

Three hundred ninety-six pupils from a population of 669 pupils in first grades in the Pittsburgh Public Schools in the study continued in the second year of this investigation. From a total population of 289 pupils in the Integrated Experience Approach to Communication in first grade, 172 continued in the second year. Two hundred twenty-four pupils from a first grade population sample of 380 students in the Coordinated Basal Language Arts Approach continued to second grade experimental classrooms.

Only 18 of the original 24 first grade classrooms continued the investigation in the second year. Six classrooms did not continue either upon recommendation by the research staff or upon request of the Pittsburgh Board of Education because of circumstances that would further confound experimental findings.

Since population attrition was considerable after one year of the research study, multi-variate analyses of variance within each method were performed to determine whether or not the pupil population continuing to second grade might be representative of the total first grade population in the original sample. Table 1 and 2 are summaries of multivariate analyses of variance for testing the significance of difference between the first grade population continuing to second grade within each method and those pupils who did not continue in the study. Variables examined included reading attitudes measured with the San Diego Pupil Attitude Inventory and reading achievement as measured by subsections of the Stanford Achievement Tests. As indicated in the tables, at .01 level there were statistically significant differences between the original first grade population and the continuing sample of first graders who did not continue to second grade within each of the instructional approaches on the criterion variables selected for evaluation.

TABLE 1

SUMMARY OF THE MULTIVARIATE ANALYSIS OF VARIANCE FOR TESTING THE SIGNIFICANCE OF DIFFERENCE BETWEEN THE PUPIL SAMPLE OF PUPILS CONTINUING TO GRADE TWO IN THE INTEGRATED EXPERIENCE APPROACH TO COMMUNICATION AND THOSE NOT CONTINUING

	Means		S.D.		Multivariate
Variables	Sample 1	Sample 2	Sample 1	Sample 2	F
1. Pupil Reading Attitude (San Diego)	19.77	18.38	3.62	5.66	
Stanford Achievement Tests					
2. Word Meaning	26.48	20.92	5.85	8.28	11.78*
3. Paragraph Meaning	28.70	23.55	7.61	12.84	
4. Vocabulary	25.67	22.56	5.40	9.30	
5. Spelling	16.94	12.37	3.58	6.42	
6. Word Study	43.14	35.27	7.72	11.41	

Sample 1 = those pupils in the study continuing to Grade 2
Sample 2 = those pupils not continuing to Grade 2

Total number of pupils in Sample 1 = 172
Total number of pupils in Sample 2 = 117

*Statistically significant at .01
**Statistically significant at .05

TABLE 2

SUMMARY OF THE MULTIVARIATE ANALYSIS OF VARIANCE
FOR TESTING THE SIGNIFICANCE OF DIFFERENCE
BETWEEN THE SAMPLE OF PUPILS
CONTINUING TO GRADE TWO IN THE
COORDINATED BASAL LANGUAGE ARTS
APPROACH AND THOSE NOT CONTINUING

	Means		S.D.		Multivariate
Variables	Sample 1	Sample 2	Sample 1	Sample 2	F
1. Pupil Reading Attitude (San Diego)	17.86	17.79	4.45	4.21	
Stanford Achievement Tests					
2. Word Meaning	23.90	20.59	6.01	7.51	7.79*
3. Paragraph Meaning	27.12	22.37	6.97	9.36	
4. Vocabulary	24.17	20.99	6.21	7.72	
5. Spelling	17.28	13.29	6.90	6.83	
6. Word Study	40.82	36.56	8.73	10.89	

Sample 1 = those pupils in the study continuing to Grade 2
Sample 2 = those pupils not continuing to Grade 2

Total number of pupils in Sample 1 = 224
Total number of pupils in Sample 2 = 156

*Statistically significant at .01
**Statistically significant at .05

To further ascertain whether or not the continuing populations and those not continuing were significantly different at the outset of first grade, multivariate analyses of variance were employed and the following criterion variables were considered: sex, mental age, phoneme identification, recognition of capital letters, word learning rate, pattern copying abilities, recognition of identical forms, word meaning, listening, matching, numbers, copying forms, social-emotional maturity, and family index of social position. A description of each of these variables and the instruments for measurement of each can be found in the final first grade report of this longitudinal investigation, Project 2729, U. S. Department of Health, Education, and Welfare - Cooperative Research Division. Similar differences as described in the first grade study, were again evident in the readiness evaluations of the total population continuing to second grade.

The original population of pupils from the second grade population continuing to third grade totalled 351 in number, representing a loss of only 45 children from the second grade sample. One hundred fifty-four pupils from a second grade sample of 172 continued to third grade classes designated as those taught through an Integrated Experience Approach to Communication. One hundred ninety-seven pupils from a second grade sample of 224 continued to third grade classes designated as those taught through a Coordinated Basal Language Arts Approach. Thus in each of the instructional approaches population losses amounted only to 11 per cent and 12 per cent of the second grade continuing sample. The investigators could reasonably assume that such a negligible random population loss did not result in significant differences between the intact population at the close of Grade 2 and the pupil population continuing to Grade 3.

Nevertheless, as the study progressed in second grade population teachers were confronted with classes containing pupils who were in the study in first grade as well as pupils who entered experimental classrooms at the beginning of the second year or the third year. Pupils who entered experimental classrooms taught through an Integrated Experience Approach in second grades as well as experimental classrooms taught through a Coordinated Basal Language Arts Approach had been instructed in first grade by Basal Reading Procedures. The same confounding conditions in the pupil population were repeated at third grade levels.

Tables 3 and 4 clearly depict the numbers of first grade pupils, and second grade pupils, per class, that comprised part of the total second and third grade enrollments. In some instances more than half of the class enrollment consisted of pupils new to the experimental treatments.

TABLE 3

PER CLASS SUMMARY OF PUPILS IN THE STUDY THAT CONTINUED TO GRADE TWO AS COMPARED WITH TOTAL SECOND GRADE CLASS ENROLLMENTS

	Classroom	Total Second Grade Enrollment	Number of First Grade Pupils That Continued to Second Grade Experimental Classrooms
INTEGRATED EXPERIENCE APPROACH TO COMMUNICATION	A	32	16
	B	28	17
	C	30	13
	D	22	13
	E	29	22
	F	39	32
	G	29	24
	H	27	18
	I	36	17
COORDINATED BASAL LANGUAGE ARTS APPROACH	A	37	21
	B	35	25
	C	36	25
	D	31	30
	E	35	25
	F	28	24
	G	36	29
	H	30	30
	I	35	15

TABLE 4

PER CLASS SUMMARY OF PUPILS IN THE STUDY THAT CONTINUED TO GRADE THREE AS COMPARED WITH THE TOTAL THIRD GRADE CLASS ENROLLMENTS

	Classroom	Total Second Grade Enrollment	Number of Second Grade Pupils That Continued to Third Grade Experimental Classrooms
INTEGRATED EXPERIENCE APPROACH TO COMMUNICATION	A	32	15
	B	29	15
	C	28	13
	D	32	11
	E	26	21
	F	38	27
	G	36	22
	H	24	15
	I	33	15
COORDINATED BASAL LANGUAGE ARTS APPROACH	A	38	19
	B	31	20
	C	35	21
	D	32	28
	E	37	24
	F	36	22
	G	41	24
	H	29	19
	I	33	10

As one examines Table 3, it is obvious that teachers employing an Integrated Experience Approach to Communication had more pupils to reorient to the second grade program than teachers employing a Coordinated Basal Language Arts Approach. The numbers of pupils as well as the added diversity of the incoming population, who were new to the procedures of learning in the Integrated Experience Approach, confounded the experimental conditions. These factors must be considered limitations to the accuracy of findings in this report. Findings at the close of the second grade term presented in this report are only stated about those 396 pupils who were in the original first grade experimental population and continued to second grade.

Table 4 again reflects the proportion of pupils in the original first grade population that continued in the third grades. Findings at the close of the third year are, consequently, reported only on third graders who were among the first and second grade continuing pupils.

At the close of the second grade and third grade terms, the 100 pupils who were identified in the first grade as the random sub-sample of the total population in the study were again re-identified. A number of selected reading tests were individually administered to pupils in this representative sub-sample.

C. School and Community

The Pittsburgh Public Schools are located throughout one of the nation's largest, most diverse urban communities. The median income representative of Pittsburgh's 604,332 residents is $5,605. Adults living in the city have completed 10.0 median years of education.

Each instructional day in the Pittsburgh Public Schools begins at 8:40 a.m. and terminates at 3:30 p.m., averaging 6 hours and 50 minutes of instruction. The school year ranges between 195 and 200 instructional days.

Classes vary in size throughout the city schools. In this study class sizes ranged from 22 to 39 pupils per unit in second grades and 24 to 38 pupils per unit in third grades. Teacher - class size ratios could not be justifiably compared between instructional approaches since student teachers and/or teacher aides were, in some instances, part of the instructional team.

Furthermore, at second and third grade levels various degrees of team teaching were introduced within some classes. Though teaming was not extended to language arts subjects for classrooms in the investigation, pupils and teachers were teamed in other subject areas such as science, math, and social studies. Obviously, these administrative and organizational variations were not evenly distributed between the instructional approaches. These factors were additional confounding effects over which the investigators had no control. It was not feasible, thus, to evaluate such effects on pupils, teachers, or methods.

Every school in the city system was serviced by a central school system library. Each class also had access to its respective school library. In both instructional approaches, every feasible attempt was made to replenish existing classroom collections of trade books.

During the second and third years of the investigation research staff members were invited to Parent-Teacher programs through which teachers and supervisors in the Pittsburgh Public Schools informed parents about some facets of the experimental instructional programs. Parents appeared interested and generally receptive to innovative instructional programs for their children.

D. The Teachers

Teachers participating in the second and third years of the study were generally selected because of their previous positions at those grade levels in schools continuing in the investigation. All teachers, except one, were new to the research project in second grades. Similarly, at the third grade level, all the teachers except one who had begun in the study the second semester of second grade, were new in the investigation.

Tables 5, 6, 7, and 8 contain pertinent data about teachers participating within each instructional approach at the second grade levels and at the third grade levels. As indicated in Tables 5 and 6, teachers employing the Integrated Experience Approach to Communication were, on an average, younger, had fewer total years of teaching experience, and had fewer total years of second grade teaching experience than teachers using a Coordinated Basal Language Arts Approach in second grades. At third grade levels, Tables 7 and 8 demonstrate, on an average, that teachers employing the Integrated Experience Approach to Communication were similar in age and years of third grade experience to teachers using the Coordinated Basal Language Arts Approach but had considerably fewer average years of total teaching.

TABLE 5

PERTINENT DATA ABOUT PARTICIPATING SECOND GRADE TEACHERS EMPLOYING AN INTEGRATED EXPERIENCE APPROACH TO COMMUNICATION

Teacher	Age	Highest Degree	Type of Certification	Total Years of Experience	Total Years of Second Grade Experience	Marital Status	Number of Children
1	24	BS +	Col. Provis.	2	2	S	-
2	28	BS +	Perm.	6	6	S	-
3	31	BS +	Perm.	8 1/2	6	S	-
4	32	BS +	Perm.	6 1/2	4 1/2	M	2
5	22	BS	Col. Provis.	0	0	S	-
6	23	BS +	Col. Provis.	1	0	S	-
7	35	M.Ed.	Perm.	12	12	S	-
8	24	- BS	Emer.	2	0	M	1
9	30	M.Ed.	Perm.	8	0	S	-
Mean	29			5	3.4		

TABLE 6

PERTINENT DATA ABOUT PARTICIPATING SECOND GRADE TEACHERS EMPLOYING A COORDINATED BASAL LANGUAGE ARTS APPROACH

Teacher	Age	Highest Degree	Type of Certification	Total Years of Experience	Total Years of Second Grade Experience	Marital Status	Number of Children
1	42	M.Ed.	Perm.	4 1/2	0	S	-
2	56	BS +	Perm.	22 1/2	11 1/2	M	2
3	38	M.Ed.+	Perm.	18	10	S	-
4	51	BS +	Perm.	15	4	M	2
5	52	M.Ed.	Perm.	32	25	S	-
6	22	BS	Col. Provis.	0	0	S	-
7	55	- BS	State Normal	20	12	M	2
8	32	BS +	Perm.	10	8	S	-
9	23	BS +	Col. Provis.	1	1	S	-
Mean	41			14	8		

TABLE 7

PERTINENT DATA ABOUT PARTICIPATING THIRD GRADE TEACHERS EMPLOYING AN INTEGRATED EXPERIENCE APPROACH TO COMMUNICATION

Teacher	Age	Highest Degree	Type of Certification	Total Years of Experience	Total Years of Third Grade Experience	Marital Status	Number of Children
1	55	BS +	Perm.	9	1	M	2
2	21	BS	Col. Provis.	1/5	0	S	-
3	40	BS +	Col. Provis.	1	0	M	4
4	28	BS +	Perm.	5	4	S	-
5	34	BS	Perm.	5 1/2	2	M	2
6	60	- BS	State Normal	22 1/2	15	M	2
7	24	BS +	Col. Provis.	2	0	M	-
8	59	- BS	Perm.	15	8	M	2
9	60	- BS	Perm.	20 1/2	14	M	1
Mean	42			9	5		

TABLE 8

PERTINENT DATA ABOUT PARTICIPATING THIRD GRADE TEACHERS EMPLOYING A COORDINATED BASAL LANGUAGE ARTS APPROACH

Teacher	Age	Highest Degree	Type of Certification	Total Years of Experience	Total Years of Third Grade Experience	Marital Status	Number of Children
1	23	BS	Col. Provis.	1 1/2	0	M	-
2	36	M.Ed. +	Perm.	14	6	S	-
3	24	BS +	Col. Provis.	2	2	M	-
4	52	BS +	Perm.	19	8	M	3
5	62	M.Ed.	Perm.	41	15	M	-
6	64	BS +	Perm.	22	5	M	2
7	61	M.Ed.	Perm.	23	7	W	3
8	55	- BS	Perm.	20	9	M	2
9	38	BS +	Col. Provis.	2	2	M	3
Mean	46			17	6		

The attitudes of teachers toward the approaches they were employing in the study, toward children and teaching, and toward supervisory help from the research staff were fairly obvious. Teachers using the Integrated Experience Approach to Communication, generally and initially, expressed less confidence in their possible successes with a new method than teachers using the Coordinated Basal Language Arts Approach. Regardless of method, most teachers welcomed supervisory suggestions and demonstrations with children.

Attempts were made at second and third grade levels to determine whether or not significant differences existed in teachers' overall competencies between the methods. A scale, for raters, was designed by the University of Minnesota Coordinating Center for Cooperative Research Studies in Beginning Reading and employed by a jury of evaluators. Averages of three ratings were assigned, per teacher.

Because of the limited magnitude of the number rating system, analyses of variance were inappropriate and yielded spurious conclusions. An examination of teacher ratings reflected that participating teachers represented a range of competency in both approaches from poor to superior and average competency between methods were comparable. To honor requests from supervisory personnel in the Pittsburgh Public Schools, per teacher ratings are not included in the report.

The jury of raters was comprised only of research staff personnel. A letter on file from a key supervisor in the Pittsburgh Public Schools stated that supervisors from the Board of Public Education may not evaluate teachers in reports that become public domain.

E. Supervisory and Teacher Education Activities

In order to assist teachers in their instructional tasks, in-service education meetings and workshops were designed for the eighteen participating second grade teachers and their supervisors during the 1965-66 school term and for the eighteen participating third grade teachers and their supervisors during the 1966-67 school term. Periodic supervision and consultation services were also available to teachers during the study. The main purpose of this assistance was to acquaint teachers in each experimental approach with new materials, innovative techniques, and knowledge essential to the effective teaching of reading.

At the outset of the instructional program, in second grade and then third grade, all participating teachers were guided in an examination of desirable language learning outcomes for primary pupils. Learning Outcome Charts were discussed, clarified, and served as a grid for considering pupils' accomplishments and as a diagnostic profile guide for individualized instruction in the language arts in both experimental approaches. (See Appendix A). Though materials, procedures, and approaches were different between the two methods treatment groups, instructional goals were commonly defined.

Throughout the investigation all participating teachers were given some assistance in the interpretation of: standardized test results, their observations, and the results of informal evaluative instruments. On the basis of such diagnostic assessments of pupils' strengths and needs, teachers attempted to individualize instruction in the language arts for pupils.

In-service meetings for teachers and supervisors were scheduled bimonthly at the outset of the second and third years and subsequently once a month. These were planned and executed by the research staff at the University of Pittsburgh and by Miss Edna Mae Bruggeman, Scott Foresman Language Arts Consultant. The teachers attended sessions as a total group as well as sessions designed to help them within each instructional approach.

Workshop discussion topics generally evolved around the following:

1. Effectively employing the teaching approach designated
2. Organizing a classroom environment that would be conducive to creative language learning and practice
3. Individualizing directed language arts instruction and independent pupil learning experiences
4. Stimulating varied reading interests and ensuring literary tastes and appreciations
5. Demonstrating language learning techniques with children (Grade 2 and Grade 3)
6. Using and interpreting formal and informal pupil evaluative measures

7. Using teaching guides to instructional approaches effectively

8. Freeing children to express their ideas in words and writing

9. Teaching and reinforcing pupils' listening and spelling abilities through selected activities

10. Understanding language arts and processes

11. Directing reading activities

12. Getting acquainted with new materials (taperecorders, trade books, SRA kits, and etc.)

13. Sharing products of pupils' in the study

Teachers were also encouraged to bring questions about their instructional roles to group discussion sessions so that solutions might be pursued.

As during the first year, the investigators noted that the attitudes of key supervisors were clearly related to a teacher's demonstration of confidence, open-mindedness, and cooperation. An attempt was made to evaluate the supervisory attitudes within methods and compare them between methods. Since attempts were primarily subjective, unvalidated data and results will not be reported.

F. Instructional Approaches and Materials

Each of the nine teachers using the Integrated Experience Approach to Communication in second grade and third grade was provided with a spiral curricular guide prepared by Vilscek and Morgan. (See Appendix B). Since teachers were employing this approach for the first time, the guide was designed to re-inforce the teacher's understanding of the approach, to serve as a source of ideas for implementing it, and to ensure some methodological stability across the nine classrooms.

At second and third grade levels the curricular guides contained two major sections. The first section included a description of the instructional philosophies upon which the Integrated Experience Approach to Communication was conceived, suggestions for classroom organizations through which individualized instruction might be accomplished, and a complete charting of instructional outcomes in the language arts for primary grade pupils.

The second major portion of the guide included instructional units with a different interest emphasis per unit. The following are titles of the seven instructional units designed for second grade levels: "Here and Now," "In My Mirror," "Wings, Wheels, and Whistles," "Where and When," "Climbing on Clouds," "Skyways and Byways", and "And Now Tomorrow." In accord with the instructional philosophies of the approach the units were designed not only to accommodate a pupil's experiential levels but to also extend his levels of experiences.

At Level III (third grade) five extensive instructional units are contained in the second portion of the Teachers Guide. Titles of these interest area themes include: "Your Town and Mine," "Funnybones, Yours and Mine," "Our Heritage, Yours and Mine," "Imagination, Yours and Mine," and "The World Awakens, Yours and Mine." In directing teachers to use the guides, the authors (Vilscek and Morgan) suggested that teachers supplement, substitute, resequence, and implement ideas in accord with the individual needs of children in their classes. It was hoped that such a guide would ensure some methodological consistency between teachers while encouraging more flexibility in implementation.

Each unit of interest was sub-divided and contained the following:

1. A preview of the unit scope and emphasis
2. A list of instructional outcomes that might accrue from the unit study, if timely and feasible per pupil
3. Suggested procedures through which instructional experiences might be encouraged and facilitated for a whole class, small groups, or individual pupils
4. Descriptions of informal and formal procedures for teacher evaluations of pupil progress
5. An annotated bibliography of trade books and other materials to be used by pupils during individualized reading experiences
6. An appendix of various materials for the teacher such as: related commercial monographs, comprehension question guides, selections to be used in choral reading, and others.

Generally, through implementation of the instructional approach teachers were interrelating pupils' learnings in all six of the acts of communication: perceiving, listening, non-vocal signaling, speaking, writing, and reading. The small group and individual pupil dictated story was maintained throughout the second and to some extent third year as the base of instruction in reading and as the vehicle through which pupils gained listening abilities, oral expressional skills, and written expressional understandings. As individual pupils became skilled in writing stories, descriptions, poems, and other written communications independently, these became basic instructional tools for interrelated language learning.

At the second and third grade levels, increased emphasis was placed on the supervised self-selection of trade books. Trade books and other supplementary materials were used within directed individualized reading experiences. In as many instances as appropriate, individualized reading in trade books served as an extension and re-enforcement of language understandings, habits, skills, and attitudes or appreciations initially fostered in dictated communications or independent writing.

As teachers surveyed a pupil's language needs, other instructional experiences were provided so that the language program might be complete. For example, listening lessons to develop literary tastes and appreciations were devised as well as lessons in oral expressional activities such as telephoning and dramatizing. Specifically, pupils were encouraged to regard their language as a tool in socializing experiences. Teachers began to recognize, too, that interrelated language learning is a function of learning transfer and that common to all acts of language are processes of conceptualization, physio-logical functioning, structural mechanics and linguistics, study techniques, and aesthetic or cultural appreciations.

In order to implement the Integrated Experience Approach to Communication, varieties of materials were provided for teachers and pupils. Included at second and third grade levels were: hundreds of trade books per classroom (including paperback editions), tape recorders and tapes, SRA Reading Kits, The MacMillan Spectrum of Books and Skills, the "Reader's Digest Skill Builders," a picture dictionary per child, the Botel Reading Inventory, chart paper for teachers, and other miscellaneous supplies. Per class cost of materials in this approach was $500, comparable to per class cost for materials in the Coordinated Basal Language Arts Approach.

In each of the nine experimental classrooms where the Coordinated Basal Language Arts Approach was used, teachers continued to follow instructional techniques recommended within the Scott Foresman "Listen, Speak, and Write" language arts program and within the Scott Foresman Multi-Ethnic Basal Reader Program. Teachers also encouraged pupils to read independently. Available for pupils in each classroom were the Scott Foresman sets of individualized trade books titled "Invitations to Reading" as well as other library books. Filmstrips, records, workbooks, workpads, and other instructional materials were employed as deemed appropriate by teachers. Periodic diagnostic evaluations of pupils were made using unit tests and experimental editions of work pads. Diagnosis was required and results were examined by teachers under the supervision of Miss Edna Mae Bruggemann, the Scott Foresman Language Arts consultant in Pittsburgh.

Teachers in the Coordinated Basal Language Arts Approach maintained as flexible as instructional organization as possible through whole class, small group, and individual pupil experiences in communication processes. Instructional sequences in reading and directed reading activity procedures were followed appropriately per pupil as outlined in the accompanying teacher's manuals. Introduction and re-enforcement of skills in listening, speaking, writing, and reading were also planned and executed by the teachers in accord with recommendations in manuals. Instruction in the language arts, thus was coordinated by teachers to the degree suggested in the Scott Foresman program and in view of each teacher's ingenuity.

In the Coordinated Basal Language Arts Approach as well as in the Integrated Experience Approach to Communication, two hours were allotted per classroom to language arts instruction. Mere observation of pupils in each of the two instructional approaches revealed that pupils were learning to communicate but through different teaching-learning procedures. Some of the many differences between the approaches were:

1. Pre-determined, controlled repetition of vocabulary in the Coordinated Basal Approach in contrast to natural repetition of pupils' unique oral vocabularies in the Integrated Experience Approach

2. More frequent use of pupil-teacher conferences in the Integrated Experience Approach in contrast to incidentally incorporated conferences between pupils and teachers in the Coordinated Basal Approach

3. Greater use of trade books, supplementary materials, and pupil-teacher prepared materials for directed language arts

instruction in the Integrated Experience Approach than in the Coordinated Basal Approach

G. Measurement Instruments

Since the findings in this study are presented with reference to measurement scales or instruments, the following are brief descriptions of those employed in the initial and final collection of data. The measurement instruments are classified into two categories: those which were selected and used cooperatively throughout the coordinated research centers in the second and third year of the investigations and those which were unique to the Pittsburgh Project. Samples of measurement instruments unique to the Pittsburgh Project in 1965-66 and 1966-67 can be found in Appendix C of this report.

1. Measurement Instruments Unique to the Pittsburgh Project for Initial Data Gathering

Two evaluative instruments were selected and administered, initially, in order to provide teachers with information basic to beginning an individualized instructional program. Described briefly are the Kuhlmann-Anderson Intelligence Tests and the Gates Advanced Primary Reading Tests:

a. Kuhlmann-Anderson Intelligence Tests, Grades 2 and 3, Forms

The Kuhlmann-Anderson Intelligence Tests are designed for the measurement of factors of mental development in primary and intermediate grade children. Test items are numbered and arranged in order of pupil difficulty for completing items or trials. Correlations of .85 to .89, when two administrations of these batteries are averaged, occur between the intelligence quotient scores on the Kuhlmann-Anderson Intelligence Tests and the Stanford-Binet Individual (L-M Form) Intelligence Test.

b. Gates Advanced Primary Reading Tests, Grades 2 and 3, Forms

These tests are generally survey in type and are employed in evaluating a pupil's reading vocabulary, general comprehension, and speed factors. They serve as reasonable tools for the teacher's assessment of a child's general and global reading achievement level.

2. Measurement Instruments Unique to the Pittsburgh Project for Final Data Gathering

To assess facets of language growth, creativity, supervisory attitude, pupils' social integration, and listening comprehension the following instruments or techniques were used in Grades 2 and Grades 3: University of Pittsburgh Diagnostic Rating Checklists of Language Outcomes for Second Graders, 1966 and for third graders, 1967; Task 1: Figure Completion, Task 2: Circle Tests, and Task 3: "Product Improvement - Abbreviated Form VII," Minnesota Tests of Creative Thinking; University of Pittsburgh Rating Record of Supervisory Attitudes and Pupils' Social Integration, 1966 and 1967; and an Informally Devised Test of Listening Comprehension Abilities at Second and Third Grade Levels.

a. University of Pittsburgh Diagnostic Rating Checklists of Language Outcomes for Second Graders, 1966 and for Third Graders, 1967.

This instrument was designed as a checklist for the teacher's assessments of each pupil's performance in specific communication areas. Knowledge or understandings, habits or skills, and attitudes or appreciation related to language learning are evaluated, respectively, under three broad categories: Understandings, Applications, and Personal Responses. Correlations between sub-categories of the rating scale and sub-sections of the Stanford Achievement Test range from .11 to .61 on the second grade level scale (1966) and from .30 to .59 on the third grade level scale (1967). Per variable correlations can be found in Appendix D for the 1965-66 and 1966-67 terms of this study.

b. Task 1: Figure Completion; Task 2: Circle Tests; and Task 3: "Product Improvement - Abbreviated Form VII," Minnesota Tests of Creative Thinking.

The Figure Completion Test, Task 1, included ten abstract figures that all third graders in this investigation were asked to complete. Each test completed was evaluated for qualities of fluency, flexibility, elaboration, and originality.

Task 2: Circle Tests, were administered to all second graders at the close of the second year of the project. The test form includes forty-two circles, one inch in diameter. The subjects were asked to sketch main ideas within or around the circles on the pages. Qualities of fluency, flexibility, originality, and elaboration were noted.

Task 3: Product Improvement and Unusual Uses Tests elicit pupil responses to be evaluated on the same qualities as in Tasks 1 and 2. The Product Improvement Test, administered to a subsample population of 100, involved third graders' responses to how a toy dog might be improved to make it more interesting. The Unusual Uses for Tin Cans Test, as an alternate, was administered to a subsample population of 100 second graders.

c. University of Pittsburgh Rating Record of Supervisory Attitudes and Pupils' Social Integration, 1966 and 1967.

In order to evaluate the effects of supervisory attitudes of key supervisory personnel in this investigation, the research staff devised a rating scale that included the following categories: Supportive, Indifferent, Negative, and Destructive. Each category was ranked from 1 through 4, with four representing the highest positive score. Since supervisors were rated only by the research staff, results were noted but will not be reported in detail. These general, subjective evaluations reflected, at second as well as third grade levels, that supervisory attitudes toward the Co-ordinated Basal Language Arts Approach were generally supportive while supervisory attitudes toward the Integrated Experience Approach to Communication ranged from supportive to destructive. In the latter approach, such a range was directly related to the building principal's or other supervisor's resistance to changes in instructional procedures.

It was not feasible, in this study, because of time, funds, and available standardized instruments to objectively measure each pupil's level of social integration at the close of the second grade or third grade term. Again, subjectively, classes were rated as to their generally observable cohesiveness, cooperation, successful class and group planning, and successful completion of group or class projects or plans. Values from highest to lowest possible scores (5 to 1) were assigned per category. Total tallies by method reflected that classes taught through an Integrated Experience Approach appeared generally better socially integrated. No attempts were made to test significances of differences between groups statistically because of the subjectivity possible in this evaluation.

d. Informally Devised Tests of Listening Comprehension, 1966 and 1967 Batteries.

A minimal assessment of listening comprehension was attempted at second and third grade levels in this study. Graduated selections, two paragraphs in length, were read orally by an examiner during final evaluation sessions. After listening to each of three sets of selections, pupils were asked to respond to printed copies of multiple choice questions about each selection. Questions and multiple choice possibilities for each of the items were read by the examiner to reduce pupils' difficulties in reading.

At each grade level approximately fifteen minutes were allotted to administering this test. Comprehension questions after each selection were designed to include those of a literal as well as interpretive level.

3. Common Measurement Instruments Selected for Final Data Gathering

Final measurement instruments common to all pupils, across the nation, participating in the Cooperative Studies of Beginning Reading Instruction were the Stanford Achievement Test, Advanced Primary Battery II, Forms X and W; San Diego Pupils Inventory of Reading Attitudes; Pupil Inventories of: number of books read completely, number of books read partially, eagerness to read, and maturity of choices; Gilmore Oral Reading Test, Form A; Gates Word Pronunciation Test, Form I; Fry Phonetically Regular Words Oral Reading Test; and the Restricted Stimulus Measure of Creative Writing.

a. Stanford Achievement Test, Advanced Primary Battery II, Form X

This battery of Stanford Achievement Tests was designed for Grades 2 and 3. The following sub-tests are included: word meaning, paragraph meaning, science and social studies concepts, spelling, word study skills, language, arithmetic computation, and arithmetic concepts. Information related to test subsection reliability, content validity and normative sampling can be found in test manuals.

b. Gates Word Pronunciation Test, 1942.

This test was administered using the examiner's card, preferably. A pupil's score is represented by the number of correct responses. Normative raw score, grade score data were available in the manual of directions.

c. Pupil Inventories About Books.

For a period of approximately one month in Grade 2, teachers kept accurate accounts of the following aspects of pupils' book behaviors: number of books read completely, number of books read partially, eagerness to read, and maturity of choices. At random, the month of March was selected by the coordinators and directors of the continuing investigations as a representative period during which book behavior would be observed and recorded in the studies.

d. Fry Phonetically Regular Words Oral Reading Test, 1964.

An experimental copy of this test was administered to the pupil sub-sample in this study. The test consists of thirty words which each child was asked to attempt to read orally. No manual or validity-reliability data were provided.

e. Gilmore Oral Reading Test, Form A, 1951.

This test was designed for measuring aspects of oral reading accuracy, comprehension, and rate. Ten gradated paragraphs were employed to evaluate oral reading competencies and to assess difficulties. This test was individually administered to the population sub-sample. Technical data were available in test manuals.

f. San Diego Pupils' Attitude Inventories.

These experimental inventories were administered to all participating pupils. The main purpose in administering this inventory was to determine how positive or negative pupils' attitudes were toward reading.

g. Restricted Stimulus Measure of Creative Writing.

Correction procedures for obtaining a restricted stimulus measure were provided by Dr. John Manning, University of Minnesota. The following aspects of creative writing were evaluated: a mechanics ratio of capitalization, punctuation, and identification; total words spelled correctly; and total running words. No standardization or reliability-validity data were provided for this measure.

H. Research Design and Statistical Strategy

To facilitate accomplishing the objectives stated for the continuation of this investigation, "2 x 3 x 2" factorial designs were primarily employed in an examination of: Method, Socio-economic Level, Sex, and Method, Mental Age Levels, and Sex. Table 9 indicates how treatment groups were stratified for analysis when intelligence levels are normally distributed. Table 10 illustrates how treatment groups were stratified for analysis when socio-economic levels are normally distributed.

Final data was processed and analyzed at the Computation and Data Processing Center, University of Pittsburgh. Data was processed through a model 7090 IBM Computer. Data cards were keypunched and verified at the Center, also.

TABLE 9

STRATIFICATION OF TREATMENT GROUPS FOR ANALYSES OF SOCIO-ECONOMIC EFFECT

	Socio-Economic Levels		
Type of Method	Lower	Middle	Upper
Method A (Basal Language Arts)	Boys Girls	Boys Girls	Boys Girls
Method B (Coordinated Language Experience)	Boys Girls	Boys Girls	Boys Girls

TABLE 10

STRATIFICATION OF TREATMENT GROUPS FOR ANALYSES OF MENTAL AGE EFFECT

	Mental Age Levels		
Type of Method	Low	Average	High
Method A (Basal Language Arts	Boys Girls	Boys Girls	Boys Girls
Method B (Coordinated Language Experience)	Boys Girls	Boys Girls	Boys Girls

Statistical programs utilized in the analysis of data included:

1. Fortran Program for Checking and Verification of Data -- Mr. Walter McGhee, University of Pittsburgh
2. Multi-variate Analyses of Variance Program, General Linear Hypothesis Model -- Dr. Charles Hall, Project Talent -- University of Pittsburgh (This program yields both multivariate and univariate analyses.)
3. Multi-variate Analyses of Variance Program -- Dr. William Cooley and Dr. Paul Lohnes, Project Talent -- University of Pittsburgh

Data was analyzed at the close of each year of instruction using a Post-Test Only Experimental Group Design. Multivariate and univariate analyses of variance were employed. Most of the data analysis was based on the following statistical model for a "2 x 3 x 2" analysis of variance in Table 11:

GENERAL SCHEME OF ANALYSIS

K	1: High		2: Middle		3: Low	
i j	1: Male	2: Female	1: Male	2: Female	1: Male	2: Female
Coordinated Language Experience Approach	$X_{111} \ldots X_{111n}$ $X_{111} \ldots Y_{111\,n}$					
Basal Language Arts Approach						$X_{2321} \ldots$ X_{232n} $Y_{2321} \ldots$ Y_{232n}

Main Effects and Interaction Hypotheses to be tested were as follows:

Problem I: Effects of Socio-Economic Levels

a. There were no statistically significant differences between those second (third) grade pupils at three socio-economic levels on the measured aspects of the following criterion variables: listening, oral and silent reading, spoken and written expressional fluency, creativity, and social integration.

b. There were no statistically significant differences between second (third) grade boys and girls on measured aspects of the criterion variables listed in the first hypothesis.

c. There were no statistically significant differences between those second (third) grade pupils in the Basal Language Arts classes and those in the Coordinated Language Experience Classes on measured aspects of the criterion variables listed in hypothesis one and two.

d. There were no statistically significant interactions between Method and Socio-Economic Level, between Socio-Economic Level and Sex; between Method and Sex; between Method, Socio-economic level and Sex on measured aspects of the criterion variables listed in the three main effects hypotheses.

Problem 2: Effects of Mental Age Levels

a. There were no statistically significant differences between those second (third) grade pupils at three mental age levels on measured aspects of the following criterion variables: listening, oral and silent reading, spoken and written expressional fluency, creativity, and social integration.

b. There were no statistically significant differences between second (third) grade boys and girls on measured aspects of the criterion variables listed in the first hypothesis.

c. There were no statistically significant differences between those second grade pupils in the two proposed methods on measured aspects of the criterion variables listed in hypotheses one and two.

d. There were no statistically significant interactions between method and mental age levels; between method and sex; between method, mental age level and sex on measured aspects of the criterion variables listed in the three main effects hypotheses.

The investigators studied the instruments for measuring the effects of pupil social integration; teacher effectiveness, academic preparation, and teaching experience; and supervisory attitudes. As stated in the evaluations of the measuring devices and techniques, the probable subjectivity and questionable statistical validity and reliability of these tools precluded further complex data analyses of the above effects. Since class physical environments between methods as well as the amount and degree of information about the study given to parents between methods were comparable, analyses of these effects statistically were deemed inappropriate.

III. ANALYSIS OF DATA AND FINDINGS

The basic assumptions underlying the univariate and multivariate analyses of variance were carefully considered. The hypothesis, that some randomization was operational in pupil population attrition at the close of the first year and close of the second year of this investigation, cannot be rejected.

The analyses of final data at the close of the second year and at the close of the third year of this study is organized in view of these proposed problem areas:

1. Analyses of the effects of methods, socio-economic levels, and sex on pupil achievement.

2. Analyses of the effects of methods, mental age levels, and sex on pupil achievement.

Tables included are those illustrating grand means and F ratios for main and interaction effects. When significant interaction effects occur, descriptive analytical figures are provided. For subsequent comparisons, cell means for each experimental group are also indicated. Summary tables that show the acceptance or rejection of hypothesized significances of difference are also presented.

A. Analysis of Data and Findings at the End of Second Grade

Problem One: Analyses of the Effects of Methods, Socio-economic Levels, and Sex on Pupil Achievement in Grade Two

Hypotheses in Problem One are considered in view of thirty criterion variables. The first twenty-one criterion variables, listed, involved evaluations of the total pupil population continuing in this investigation in second grade. The effects of method were also examined in view of the criterion variables numbered twenty-two through thirty, but only on the selected continuing sub-sample of the total pupil population.

The first main effects hypotheses for variables one to twenty-one involved the comparison between total pupils in Method A, the Integrated Experience Approach to Communication and total pupils in Method B, the Coordinated Basal Language Arts Approach. The summary of findings in testing the effects of method is presented in Table 12. At the .01 level,

TABLE 12

SUMMARY OF THE UNIVARIATE ANALYSIS OF VARIANCE FOR TESTING THE SIGNIFICANCE OF DIFFERENCE BETWEEN SECOND GRADERS IN TWO METHODS OF FINAL ACHIEVEMENT DATA

Final Variables	Grand Mean		F
	Method A	Method B	
1. Pupil Reading Attitude (San Diego)	18.84	17.34	4.65**
Stanford Achievement Tests			
2. Word Meaning	22.38	21.62	2.41
3. Paragraph Meaning	37.37	36.45	1.26
4. Science & Social Studies Concepts	20.42	18.70	7.33*
5. Spelling	19.75	18.25	5.59**
6. Word Study Skills	41.96	42.58	.03
7. Language	44.91	42.61	5.49**
8. Arithmetic Computation	27.10	27.50	.001
University of Pittsburgh Diagnostic Rating of Language Outcomes			
9. Understandings	20.42	18.70	37.29*
10. Habits	18.67	15.53	16.61*
11. Skills	39.18	33.30	16.40*
12. Personal Responses	23.70	20.48	13.76*
Minnesota Tests of Creative Thinking			
Task 2: Circles Test			
13. Fluency	7.85	9.31	2.63
14. Flexibility	5.56	5.96	.62
15. Elaboration	4.72	6.36	1.97
16. Originality	2.99	3.29	.30
University of Pittsburgh Informal Test Battery			
17. Listening Comprehension	21.96	21.84	.33

TABLE 12 (Continued)

Final Variables	Grand Mean Method A	 Method B	F
Informal Pupil Inventory of Book Behavior			
18. Number of Books Completely read	12.28	15.90	5.04**
19. Number of Books Partially read	.83	.77	.00
20. Eagerness to read	3.54	3.32	1.46
21. Maturity of Choices	3.62	3.12	8.71*

Number of pupils in Method A = 83
Number of pupils in Method B = 83 (Sampled down for proportionality)

Method A = Integrated Experience Approach to Communication
Method B = Coordinated Basal Language Arts Approach

df for Method = 1
df for Error = 154

*Statistically significant at .01
**Statistically significant at .05

there were statistically significant differences between pupils on the Stanford Achievement Tests: science and social studies concepts; the University of Pittsburgh Diagnostic Rating of Language Outcomes: Understandings, Habits, Skills, and Personal Responses; and the Informal Pupil Inventory of Book Behavior: maturity of choices. At the .05 level, statistically significant differences were isolated between pupils on the San Diego Pupil Reading Attitude Inventory; the Stanford Achievement Tests: spelling, language; and the Informal Pupil Inventory of Book Behavior: number of books read completely.

At both .01 and .05 levels, when significant differences were noted, pupils in the Integrated Experience Approach to Communication had statistically significantly higher mean scores than pupils in the Coordinated Basal Language Arts Approach. In all instances, except variable 18, higher mean scores reflect higher desirable levels of attainment. An examination of variables reveals that pupils in Method B, as recorded by their teachers, read more books from beginning to end. This might suggest merely that pupils in Method A felt freely about terminating their reading of a book that lacked appeal.

There were no observable statistically significant differences between pupils in the two methods on the word meaning, paragraph meaning, and arithmetic computation sub-sections of the Stanford Achievement Tests; on the fluency, flexibility, elaboration, and originality subscores of the Circles Test - Minnesota Tests of Creative Thinking; on the listening test, University of Pittsburgh Informal Test Battery; and on number of books read completely and number of books read partially, Informal Inventory of Book Behavior.

The second main effects hypothesis in this problem involved determining if there were statistically significant differences between the pupils within Socio-Economic Levels I, II, and III. As shown in Table 13, there were statistically significant differences apparent between pupils in the Socio-economic stratifications at .01 level on the seven subsections of the Stanford Achievement Test, all subsections of the University of Pittsburgh Diagnostic Rating Checklist, the informal test of listening comprehension, and the numbers of books pupils read completely. Differences at .05 level were noted on the San Diego Pupil Reading Attitude Inventory, the originality subscore of the Circles Test, and two aspects of book behavior: eagerness to read and maturity of choices.

TABLE 13

SUMMARY OF THE UNIVARIATE ANALYSIS FOR TESTING THE SIGNIFICANCE OF DIFFERENCE BETWEEN TOTAL SECOND GRADERS WITHIN SOCIO-ECONOMIC LEVELS ON FINAL ACHIEVEMENT DATA

Final Variables	Grand Mean S.E.L. I	S.E.L. II	S.E.L. III	F
1. Pupil Reading Attitude (San Diego)	19.34	17.53	17.39	3.16**
Stanford Achievement Tests				
2. Word Meaning	25.83	21.72	18.45	27.69*

TABLE 13 (Continued)

Final Variables	Grand Mean			F
	S.E.L. I	S.E.L. II	S.E.L. III	
3. Paragraph Meaning	42.85	36.68	31.21	21.97*
4. Science and Social Studies Concepts	21.91	19.72	17.05	12.42*
5. Spelling	21.64	18.92	16.44	9.19*
6. Word Study Skills	47.07	43.07	36.66	14.70*
7. Language	51.19	42.78	37.31	33.15*
8. Arithmetic Computation	29.69	26.85	25.51	7.25*
University of Pittsburgh Diagnostic Rating of Language Outcomes				
9. Understandings	21.28	18.06	16.22	15.63*
10. Habits	19.87	17.55	13.91	16.86*
11. Skills	41.80	36.08	30.84	17.51*
12. Personal Responses	25.32	22.35	18.57	16.70*
Minnesota Tests of Creative Thinking: Task 2				
13. Fluency	8.78	9.28	7.68	.85
14. Flexibility	5.95	5.93	5.39	.27
15. Elaboration	6.80	6.12	3.63	2.98
16. Originality	3.92	3.26	2.23	3.24**
University of Pittsburgh Informal Test Battery				
17. Listening Comprehension	22.63	21.84	20.20	7.25*
Informal Pupil Inventory of Book Behavior				
18. Number of Books Completely read	14.36	15.11	12.80	27.69*

TABLE 13 (Continued)

Final Variables	Grand Mean S.E.L. I	 S.E.L. II	 S.E.L. III	F
19. Number of Books Partially read	.86	.57	.63	1.33
20. Eagerness to read	3.78	3.33	2.98	4.15**
21. Maturity of Choices	3.70	3.23	3.18	3.56**

Number of pupils in S.E.L. I = 64
Number of pupils in S.E.L. II = 64 (Sampled down for proportionality)
Number of pupils in S.E.L. III = 38

S.E.L. I = upper socio-economic level
S.E.L. II = middle socio-economic level
S.E.L. III = low socio-economic level

df for Socio-economic Level = 2
df for Error = 154

*Statistically significant at .01
**Statistically significant at .05

In every instance, except variable 18, when statistically significant differences were apparent, pupils in Socio-economic Level I had higher mean scores than pupils in Socio-economic Levels II and III. Consistently, too, except variable 18, pupils in Socio-economic Level II had higher mean scores than pupils in Socio-economic Level III. An examination of variable 18, reflects that pupils in Socio-economic Level II read more books completely than pupils in Socio-economic Level I.

Table 14 represents a summary for testing the third main effects hypothesis, determining statistically significant differences between total boys and girls. At .01 level differences between boys and girls were noted on the San Diego Pupil Reading Attitude Inventory, the science and social studies and the spelling subsections of the Stanford Achievement Tests, and two categories of book behavior: eagerness to read and maturity of choices. It is obvious in examining the table that girls had significantly higher positive

TABLE 14

SUMMARY OF THE UNIVARIATE ANALYSIS OF VARIANCE FOR TESTING THE SIGNIFICANCE OF DIFFERENCE BETWEEN TOTAL GIRLS AND TOTAL BOYS IN GRADE TWO ON FINAL ACHIEVEMENT DATA

Final Variables	Grand Mean		F
	Boys	Girls	
1. Pupil Reading Attitude (San Diego)	16.95	19.23	9.16*
Stanford Achievement Tests			
2. Word Meaning	21.83	22.17	.07
3. Paragraph Meaning	36.98	36.84	.05
4. Science and Social Studies Concepts	21.24	17.88	18.54*
5. Spelling	17.83	20.17	5.40*
6. Word Study Skills	42.70	41.84	.16
7. Language	43.67	43.85	.11
8. Arithmetic Computation	27.68	27.02	.43
University of Pittsburgh Diagnostic Rating of Language Outcomes			
9. Understandings	17.82	19.22	4.17**
10. Habits	16.43	17.79	3.36
11. Skills	35.08	37.40	2.76
12. Personal Responses	21.33	22.85	3.74
Minnesota Tests of Creative Thinking			
Task 2: Circles Test			
13. Fluency	7.70	9.46	3.60
14. Flexibility	5.49	6.03	1.19
15. Elaboration	4.76	6.28	2.16
16. Originality	2.65	3.63	4.33**
University of Pittsburgh Informal Test Battery			
17. Listening Comprehension	22.00	21.80	.19

TABLE 14 (Continued)

Final Variables	Grand Mean		
	Boys	Girls	F
Informal Pupil Inventory of Book Behavior			
18. Number of Books Completely read	13.91	14.25	.11
19. Number of Books Partially read	.98	.72	3.15
20. Eagerness to read	2.75	4.11	7.00*
21. Maturity of Choices	2.22	4.54	14.51*

Number of boys = 84
Number of girls = 82 (Sampled down for proportionality)

df for Sex = 1
df for Error = 154

*Statistically significant at .01
**Statistically significant at .05

mean scores in reading attitude, spelling, eagerness to read, and maturity of reading choices than did the boys. In contrast, though, boys had significantly higher mean scores than girls on science and social studies concepts which may be a notable reflection of the generalized interests and aptitudes of boys.

At .05 level, differences were significant between the sexes on language understandings and the originality subscores. On both of these variables, girls had higher mean scores than did boys.

In Tables 15, 16, 17, and 18 second order and first order interaction hypotheses are tested. As indicated in Table 15 only one significant second order interaction between method, socio-economic levels, and sex, exists in variable 6, word study skills at .05 level. Figure 1 is a graphic presentation of this interaction. Inspection of Figure 1 reflects nonparallelity exists for socio-economic levels in terms of sex and method. The plots indicate some parallelity between the girls in Method A and the boys in Method A from low to average socio-economic levels.

Tests of the interactions of Method x Socio-economic Levels are reported in Table 16. Inspection reveals that significant interactions at the .01 level were recorded for spelling. At the .05 level, significant Method x Socio-economic Level interactions occur in achievement of word study skills, language, arithmetic computation, and number of books read partially. Figures 2, 3, 4, 5, and 6 are graphic presentations of these interactions. Each of these figures reflects that nonparallelity exists in terms of sex and method. Plots in Figures 2, 3, 4, and 5 do, however, indicate that some parallelity is apparent from middle to high socio-economic levels between Method A and Method B. Patterns of Achievement in Figures 2, 3, 4, and 5 between pupils in each method from low to average socio-economic levels are more diverse on these variables. In contrast, Figure 6 reflects more diversity between pupils from high to middle socio-economic levels and some parallelity from middle to low socio-economic levels on number of books partially read.

TABLE 15

SUMMARY OF THE UNIVARIATE ANALYSIS OF VARIANCE FOR TESTING THE SIGNIFICANCE OF INTERACTION BETWEEN METHOD, SOCIO-ECONOMIC LEVELS, AND SEX ON FINAL ACHIEVEMENT DATA (GRADE TWO)

Final Variables	Means of Interaction Terms			
	(1)	(2)	(3)	F
1. Pupil Reading Attitude (San Diego)	17.71	18.73	17.83	.88
Stanford Achievement Tests				
2. Word Meaning	21.50	22.14	22.35	.43
3. Paragraph Meaning	35.65	36.98	37.37	.97
4. Science & Social Studies Concepts	19.99	19.87	19.94	.79
5. Spelling	18.17	19.10	20.84	.85
6. Word Study Skills	39.81	42.19	43.14	3.46**
7. Language	41.50	44.81	44.11	2.96
8. Arithmetic Computation	27.04	27.13	27.28	2.83

TABLE 15 (Continued)

	Means of Interaction Terms			
Final Variables	(1)	(2)	(3)	F
University of Pittsburgh Diagnostic Rating of Language Outcomes				
9. Understandings	17.80	18.77	18.98	1.01
10. Habits	16.67	17.17	17.49	.34
11. Skills	34.10	36.54	38.08	2.43
12. Personal Responses	20.77	22.43	22.96	1.97
Minnesota Tests of Creative Thinking				
Task 2: Circles Test				
13. Fluency	9.23	8.83	7.68	.80
14. Flexibility	6.16	5.89	5.23	.66
15. Elaboration	5.89	6.27	4.40	1.01
16. Originality	2.84	3.18	3.60	1.01
University of Pittsburgh Informal Test Battery				
17. Listening Comprehension	21.50	21.93	22.25	1.10
Informal Pupil Inventory of Book Behavior				
18. Number of Books Completely read	14.24	13.40	14.44	.28
19. Number of Books Partially read	.82	.83	1.26	.04
20. Eagerness to read	3.31	3.37	3.05	.66
21. Maturity of Choices	3.34	3.30	1.54	.22

df for Method, Socio-Economic Levels x Sex = 2
df for Error = 154

*Statistically significant at .01
**Statistically significant at .05

Methods	Low		Average		High	
	Boys	Girls	Boys	Girls	Boys	Girls
A	30.00	36.55	43.00	44.44	49.50	48.31
B	45.00	35.11	44.69	40.19	44.06	46.44

Variable Means

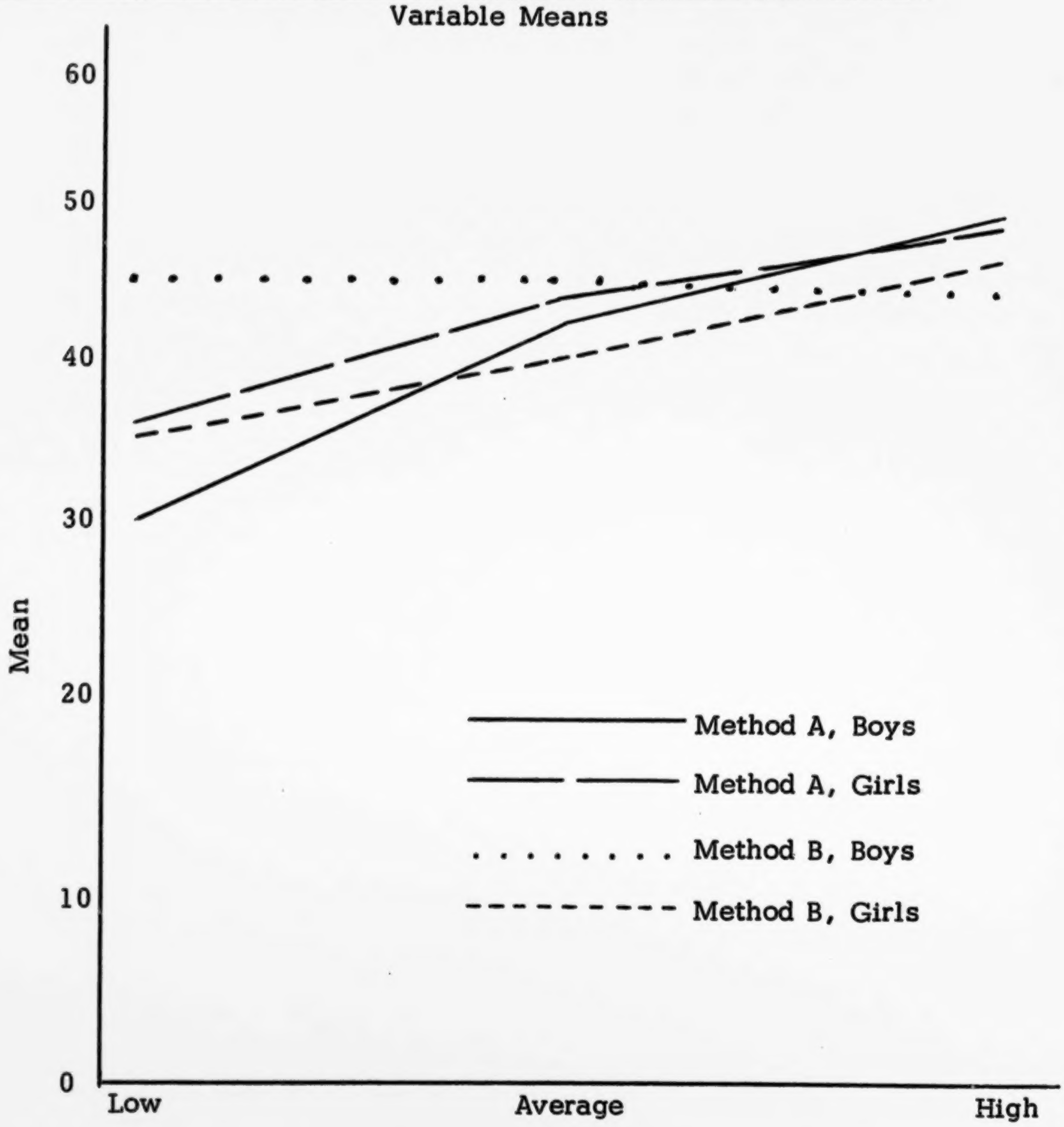


Figure 1 -- Interaction of Method x Socio-economic Levels x Sex
(Variable: Word Study Skills - Stanford Achievement Test)

TABLE 16

SUMMARY OF THE UNIVARIATE ANALYSIS OF VARIANCE FOR TESTING THE SIGNIFICANCE OF THE INTERACTION BETWEEN METHOD AND SOCIO-ECONOMIC LEVELS ON FINAL ACHIEVEMENT DATA (GRADE TWO)

	Means of Interaction Terms			
Final Variables	(1)	(2)	(3)	F
1. Pupil Reading Attitude (San Diego)	18.28	18.09	17.91	.07
Stanford Achievement Tests				
2. Word Meaning	22.91	22.55	20.53	2.98
3. Paragraph Meaning	38.01	37.96	33.76	2.07
4. Science & Social Studies Concepts	19.98	19.98	18.71	.97
5. Spelling	20.67	19.77	16.57	5.79*
6. Word Study Skills	44.40	43.22	39.19	4.08**
7. Language	46.26	44.07	40.95	4.59**
8. Arithmetic Computation	27.92	28.57	25.56	3.47**
University of Pittsburgh Diagnostic Rating of Language Outcomes				
9. Understandings	18.56	18.37	18.62	.04
10. Habits	17.34	17.09	16.90	.11
11. Skills	36.54	35.97	36.21	.06
12. Personal Responses	21.78	22.12	21.74	.19
Minnesota Tests of Creative Thinking				
Task 2: Circles Test				
13. Fluency	8.25	8.62	8.87	.16
14. Flexibility	5.79	5.43	6.06	.35
15. Elaboration	5.35	6.16	5.05	.39
16. Originality	2.87	3.43	3.11	.49
University of Pittsburgh Informal Test Battery				
17. Listening Comprehension	22.33	21.90	21.46	1.42

TABLE 16 (Continued)

Final Variables	Means of Interaction Terms (1)	(2)	(3)	F
Informal Pupil Inventory of Book Behavior				
18. Number of Books Completely read	14.42	15.73	12.02	2.08
19. Number of Books Partially Read	.44	.96	1.00	3.15**
20. Eagerness to read	3.48	3.54	3.27	.54
21. Maturity of Choices	3.33	3.52	3.29	.61

df for Method x Socio-economic Levels = 2
df for Error = 154

*Statistically significant at .01
**Statistically significant at .05

Methods	Socio-economic Levels		
	Low	Middle	High
A	14.80	20.44	24.06
B	18.13	17.41	19.22

Variable Means

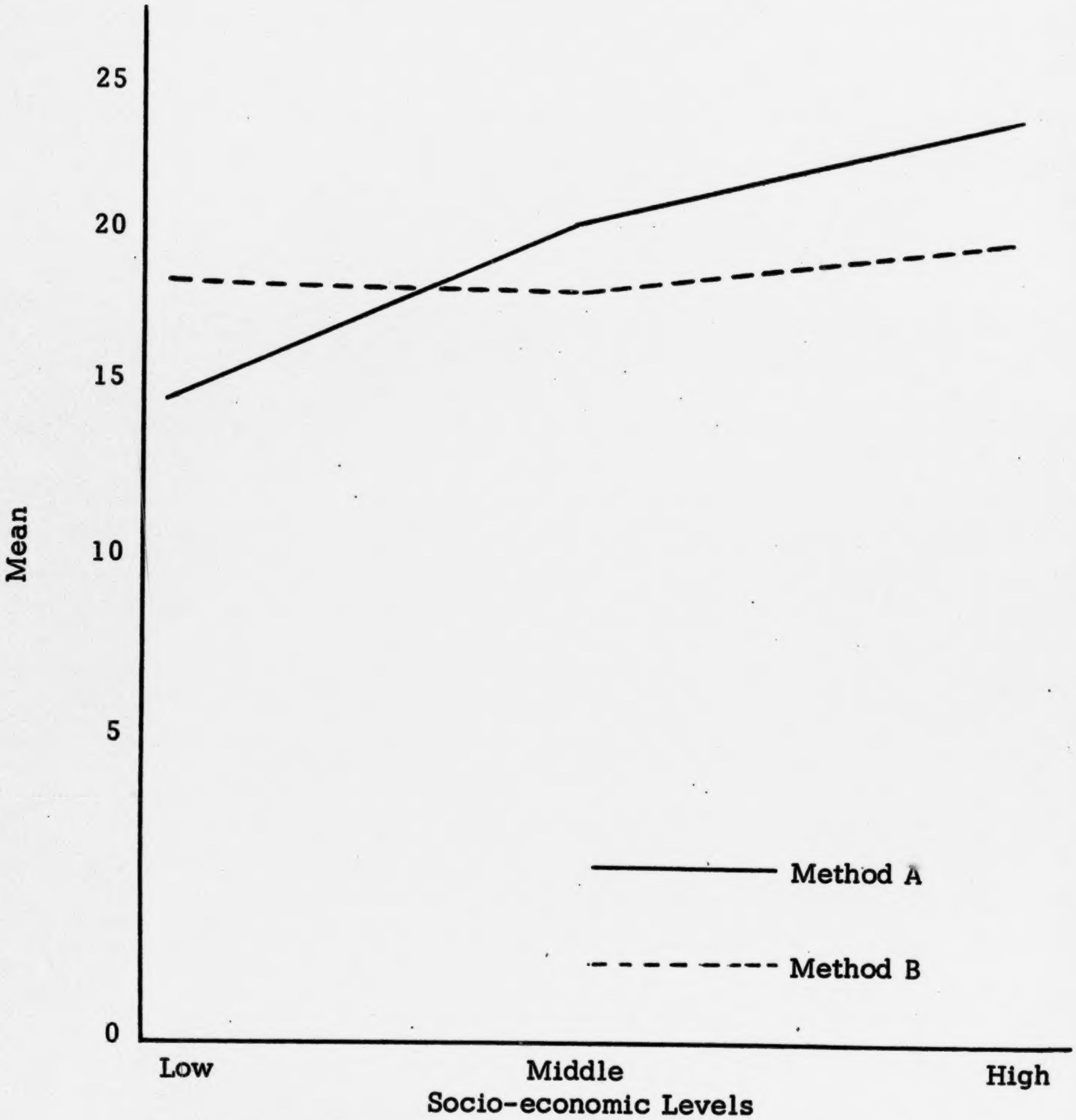


Figure 2 -- Interaction of Method x Socio-economic Levels (Variable: Spelling - Stanford Achievement Tests)

Methods	Socio-economic Levels		
	Low	Middle	High
A	33.28	44.22	48.90
B	40.05	42.44	45.25

Variable Means

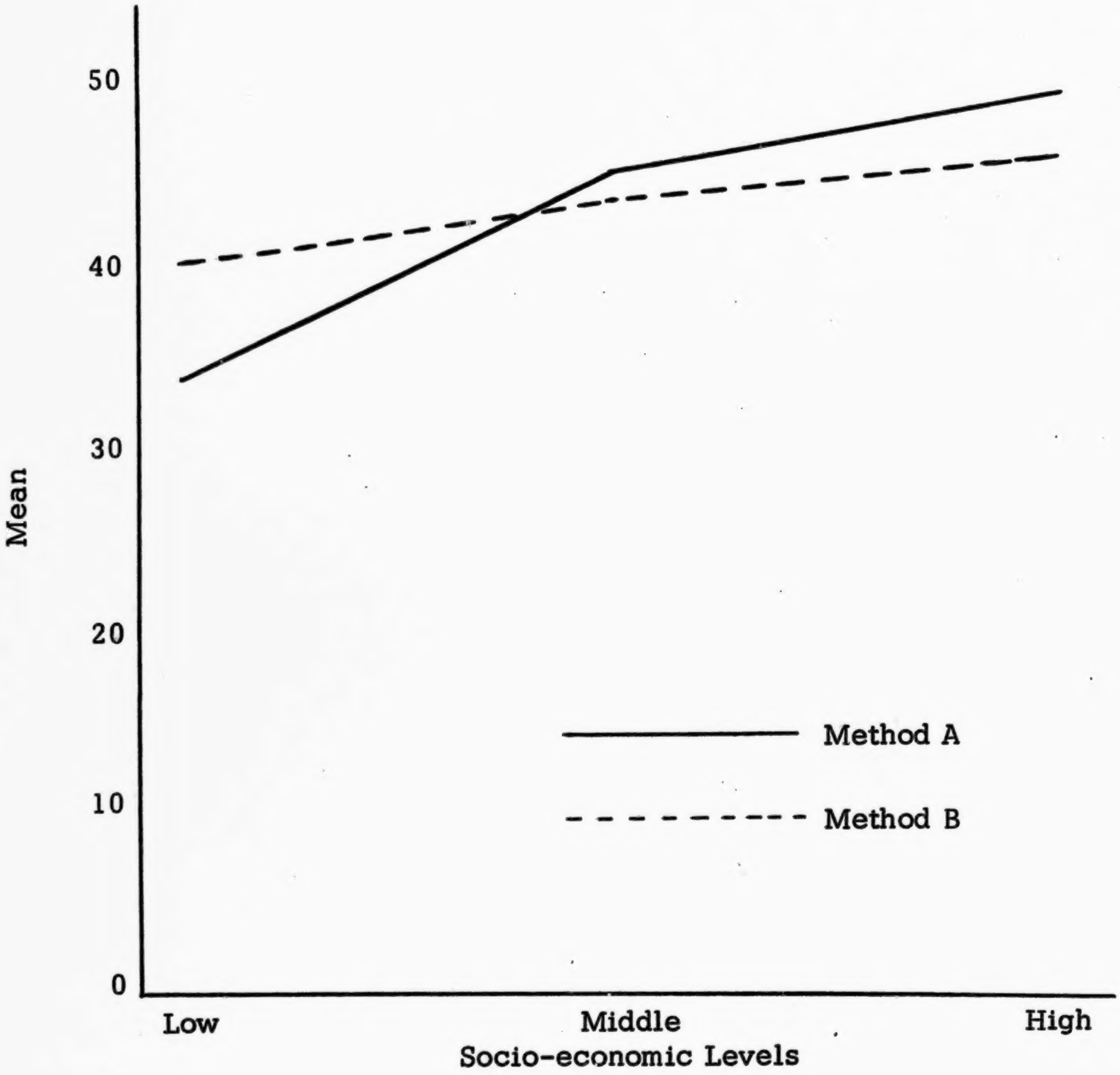


Figure 3 -- Interaction of Method x Socio-economic Levels

(Variable: Word Study Skills - Stanford Achievement Tests)

	Socio-economic Levels		
Methods	Low	Middle	High
A	35.66	44.25	54.85
B	38.95	41.31	47.53

Variable Means

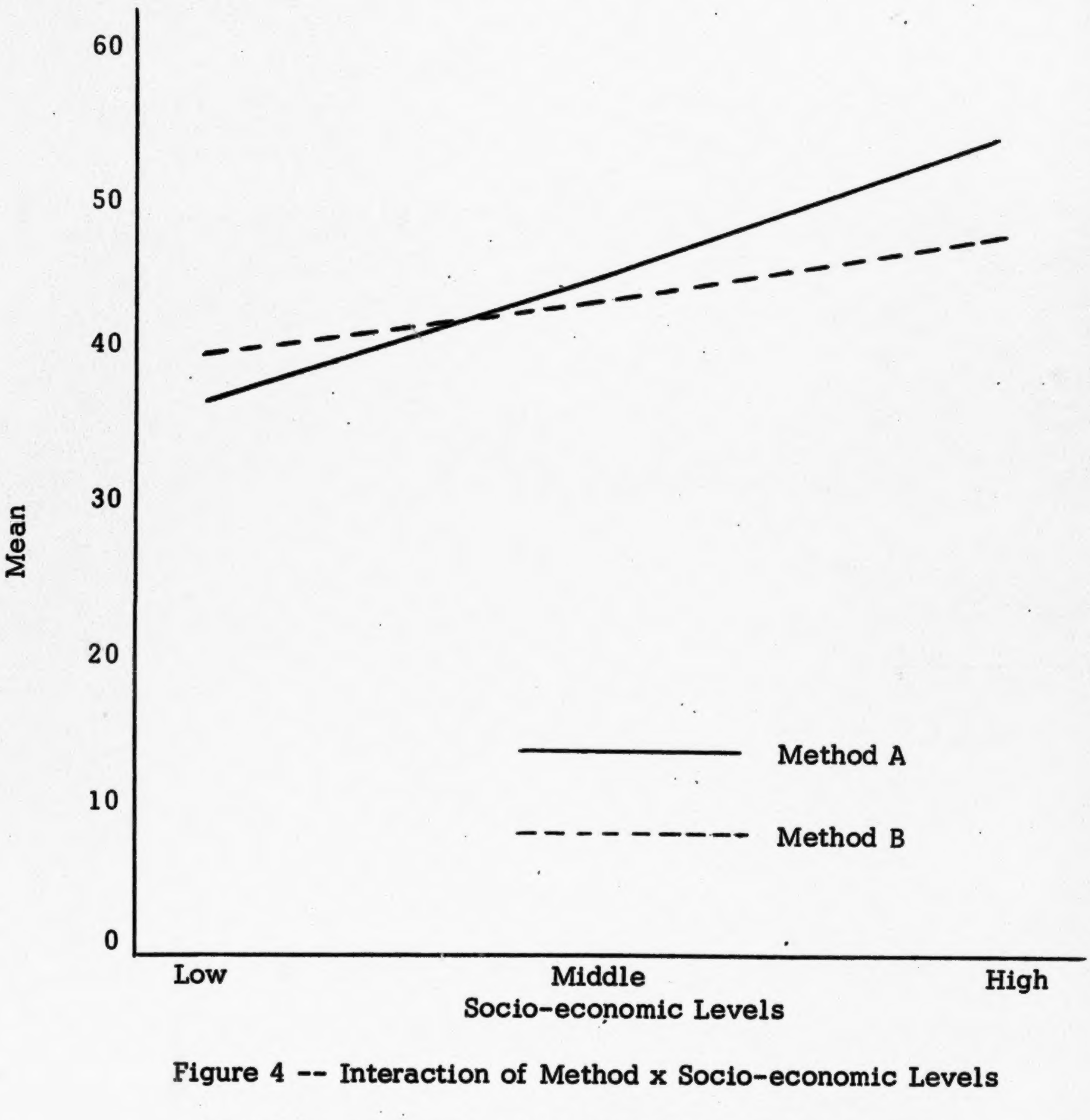


Figure 4 -- Interaction of Method x Socio-economic Levels

(Variable: Language - Stanford Achievement Tests)

Methods	Socio-economic Levels		
	Low	Middle	High
A	23.46	27.81	30.00
B	27.55	25.88	29.38

Variable Means

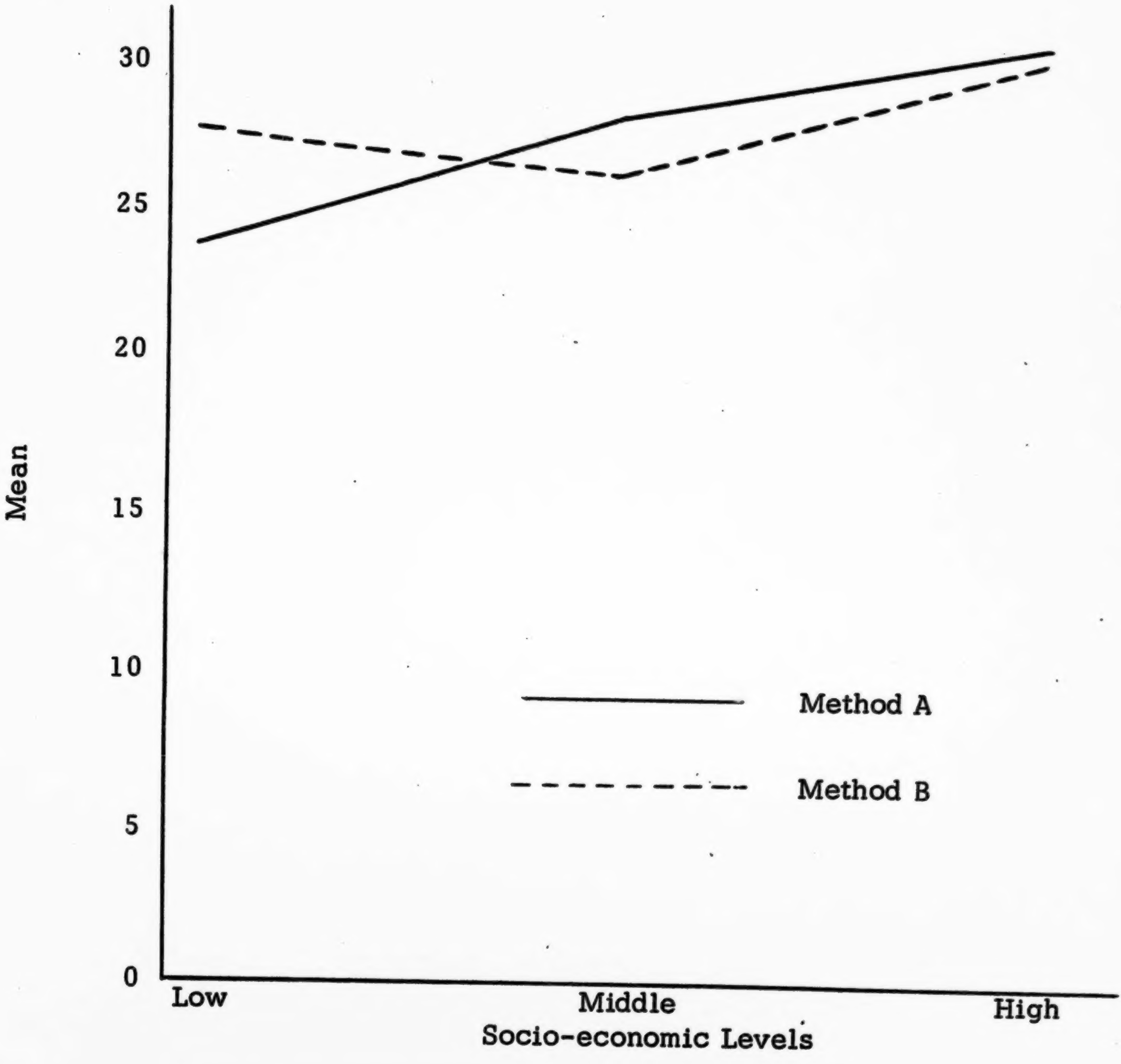


Figure 5 -- Interaction of Method x Socio-economic Levels

(Variable: Arithmetic Computation - Stanford Achievement Tests)

Methods	Socio-economic Levels		
	Low	Middle	High
A	1.19	.75	.54
B	.79	.38	1.19

Variable Means

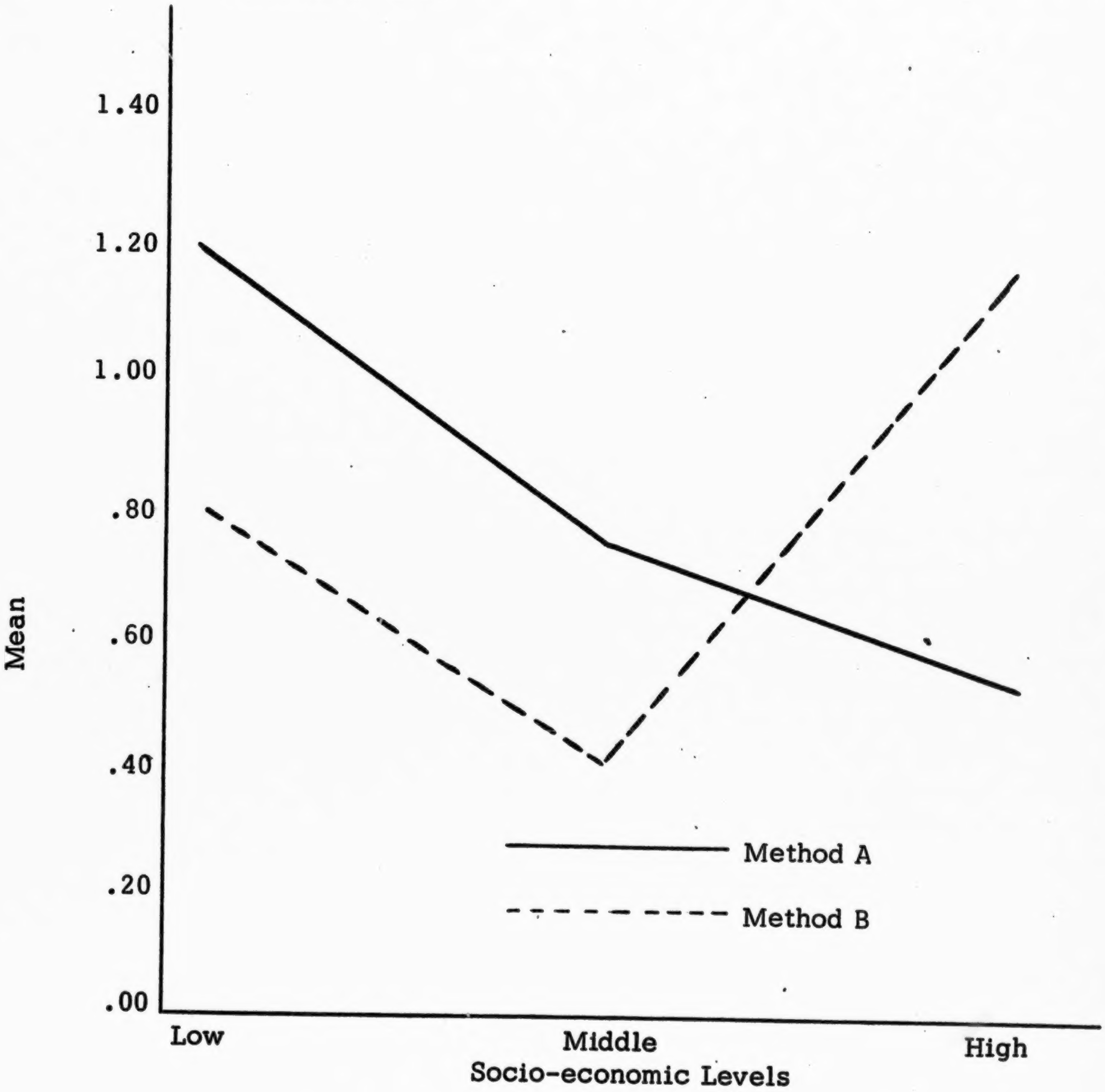


Figure 6 -- Interaction of Method x Socio-economic Levels (Variable: Number of Books Partially Read - Inventory of Book Behavior, Coordinating Center, University of Minnesota)

Table 17 indicates a statistically significant interaction at .01 between Method and Sex on variable 20, eagerness to read. At .05 level, significant interactions between Method and Sex are also noted in paragraph meaning, language habits, and language skills. Figures 7, 8, 9, and 10 are graphic presentations of these interactions. Inspection of the figures reflects that nonparallelity exists for sex in terms of method.

Inspection of Table 18 reveals that there is a significant interaction between Socio-economic Levels and Sex on listening comprehension. The obvious nonparallelity is charted in Figure 11. Plots do indicate some parallelity, however, from low to average socio-economic level.

Table 19 is included as a summary of the decisions on tests of main effects and interaction hypotheses for the twenty-one variables in Problem One, Grade Two. In order to examine variable means per experimental treatment group more specifically, Tables 20, 21, 22, 23, 24, 25, and 26 are provided.

Inspection of the tables for cell means gives further evidence that on variables where statistically significant differences were noted, pupils in the Integrated Experience Approach to Communication had higher mean scores. Consistently, too, girls in the Integrated Experience Approach to Communication had generally higher mean scores on the variables than the girls in the Coordinated Basal Language Arts Approach at each socio-economic level. Comparable mean score achievement patterns are evident for boys. Boys in the Integrated Experience Approach to Communication had higher mean scores than boys in the Coordinated Basal Language Arts Approach within Socio-economic Levels I and II. Not in all instances, though, was this mean score pattern present between boys within Socio-economic Level III. On a number of variables, boys in the Coordinated Basal Language Arts Approach had higher mean scores than boys in the Integrated Experience Approach. Similarly, in Socio-economic Level III, girls in the Coordinated Basal Language Arts Approach had higher mean scores than girls in an Integrated Experience Approach on science and social studies concepts, spelling, arithmetic computation, fluency, flexibility, and elaboration in creative thinking, books read completely, and maturity of reading choices.

TABLE 17

SUMMARY OF THE UNIVARIATE ANALYSIS OF VARIANCE FOR TESTING THE SIGNIFICANCE OF THE INTERACTION BETWEEN METHOD AND SEX ON FINAL ACHIEVEMENT DATA IN GRADE TWO

Final Variables	Means of Interaction Terms (1)	Means of Interaction Terms (2)	F
1. Pupil Reading Attitude (San Diego)	18.16	18.02	.11
Stanford Achievement Tests			
2. Word Meaning	22.51	21.49	1.51
3. Paragraph Meaning	38.58	35.24	4.90**
4. Science and Social Studies Concepts	19.50	19.62	.04
5. Spelling	19.69	18.31	1.67
6. Word Study Skills	43.84	40.70	2.80
7. Language	44.21	43.31	.19
8. Arithmetic Computation	27.98	26.72	1.61
University of Pittsburgh Diagnostic Rating of Language Outcomes			
9. Understandings	19.04	18.00	1.58
10. Habits	17.94	16.28	3.95**
11. Skills	38.05	34.43	4.53**
12. Personal Responses	22.73	21.45	1.31
Minnesota Tests of Creative Thinking			
Task 2: Circles Test			
13. Fluency	8.08	9.08	.59
14. Flexibility	5.69	6.83	.001
15. Elaboration	5.46	5.58	.06
16. Originality	3.46	2.82	1.21
University of Pittsburgh Informal Test Battery			
17. Listening Comprehension	22.32	21.48	3.37

TABLE 17 (Continued)

Final Variables	Means of Interaction Terms (1)	(2)	F
Informal Pupil Inventory of Book Behavior			
18. Number of Books Completely read	15.11	13.07	2.02
19. Number of Books Partially read	.73	.93	1.36
20. Eagerness to read	3.74	3.12	7.40*
21. Maturity of Choices	3.53	3.23	3.16

df for Method x Sex = 1
df for Error = 154

*Statistically significant at .01
**Statistically significant at .05

Methods	Girls	Boys
A	38.96	35.77
B	34.71	38.18

Variable Means

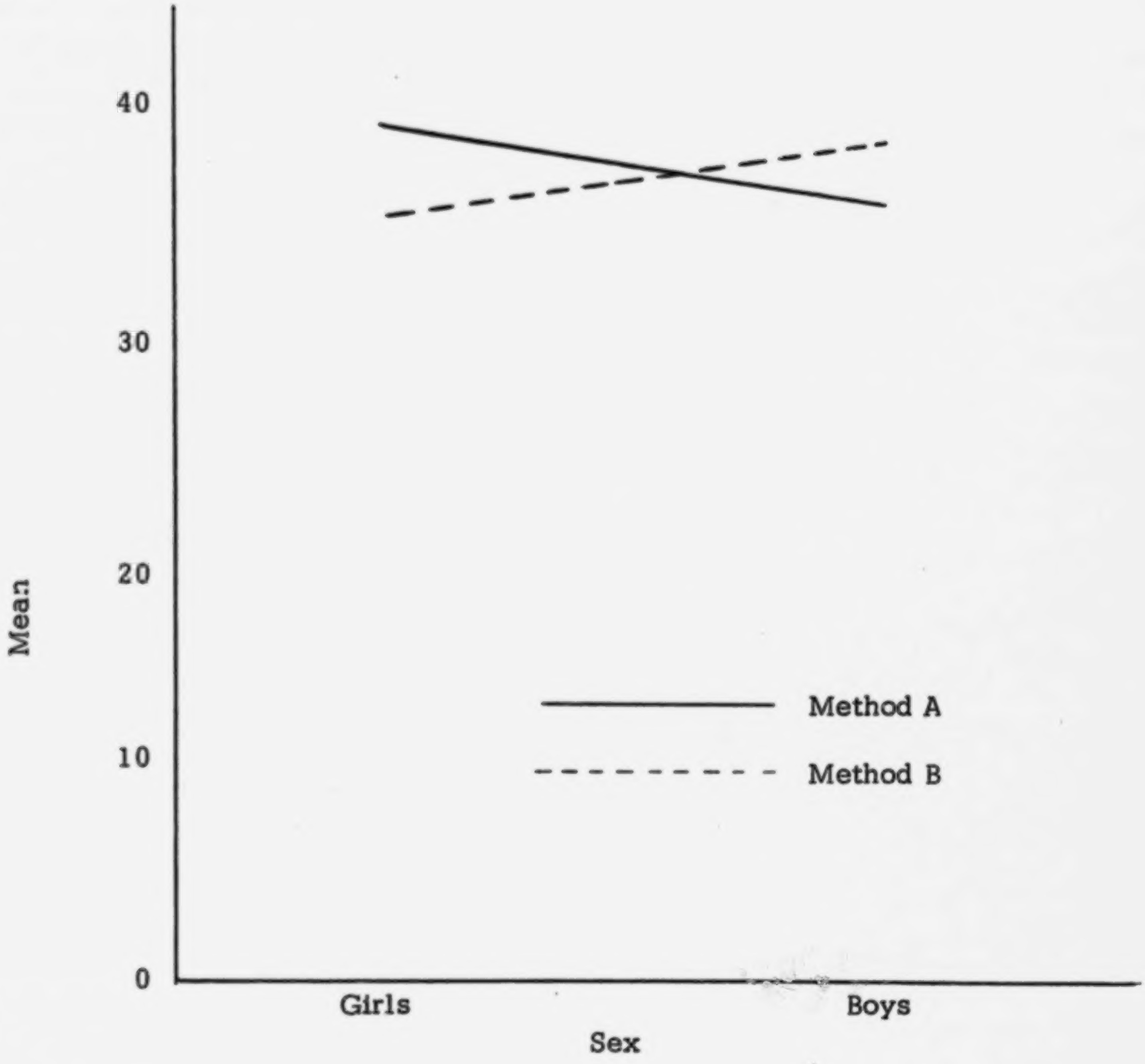


Figure 7 -- Interaction of Method x Sex

(Variable: Paragraph Meaning - Stanford Achievement Tests)

Methods	Girls	Boys
A	20.18	17.16
B	15.39	15.69

Variable Means

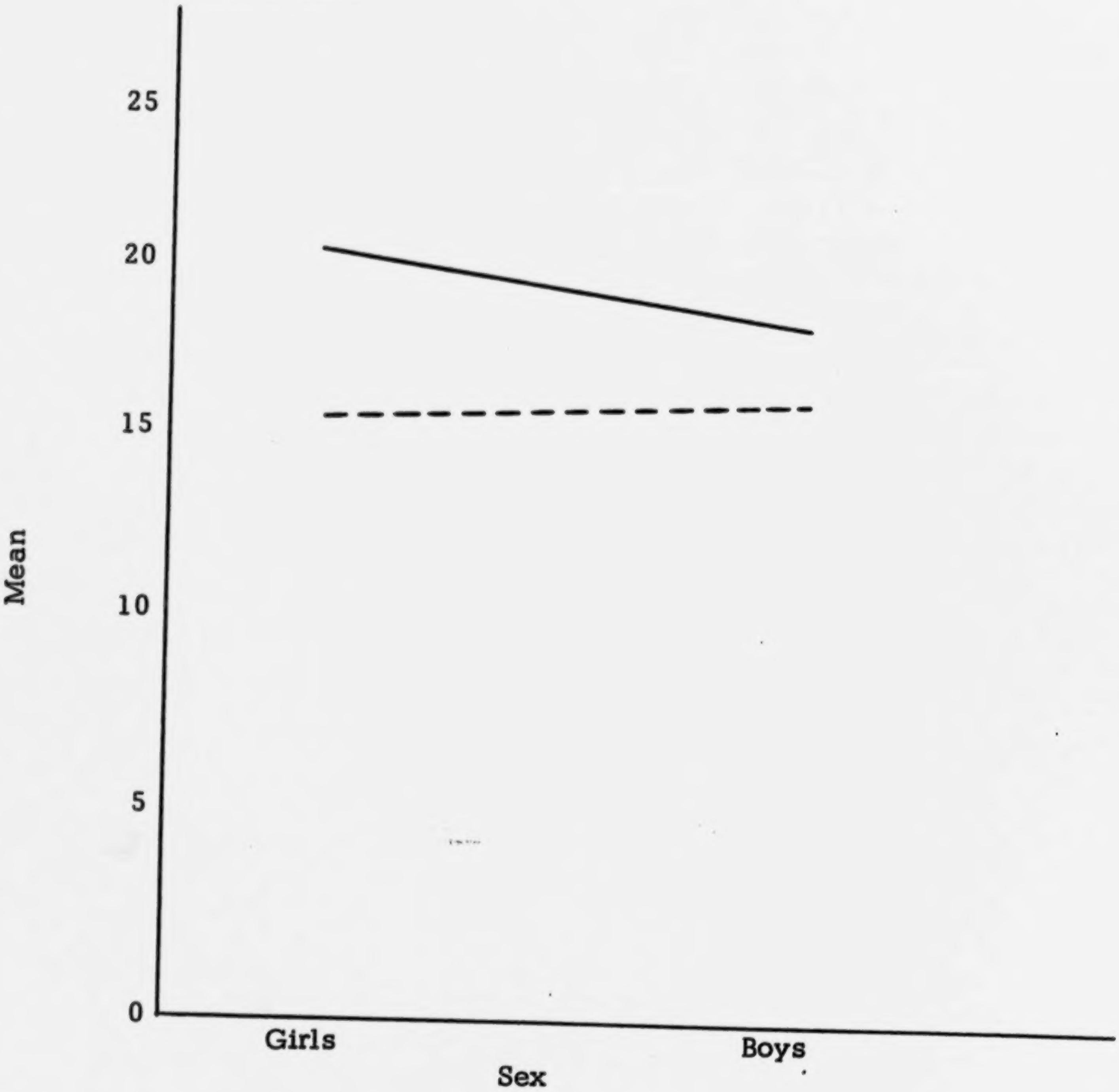


Figure 8 -- Interaction of Method x Sex

(Variable: Language Habits - University of Pittsburgh Diagnostic Rating - 1966)

Methods	Girls	Boys
A	42.15	36.20
B	32.66	33.95

Variable Means

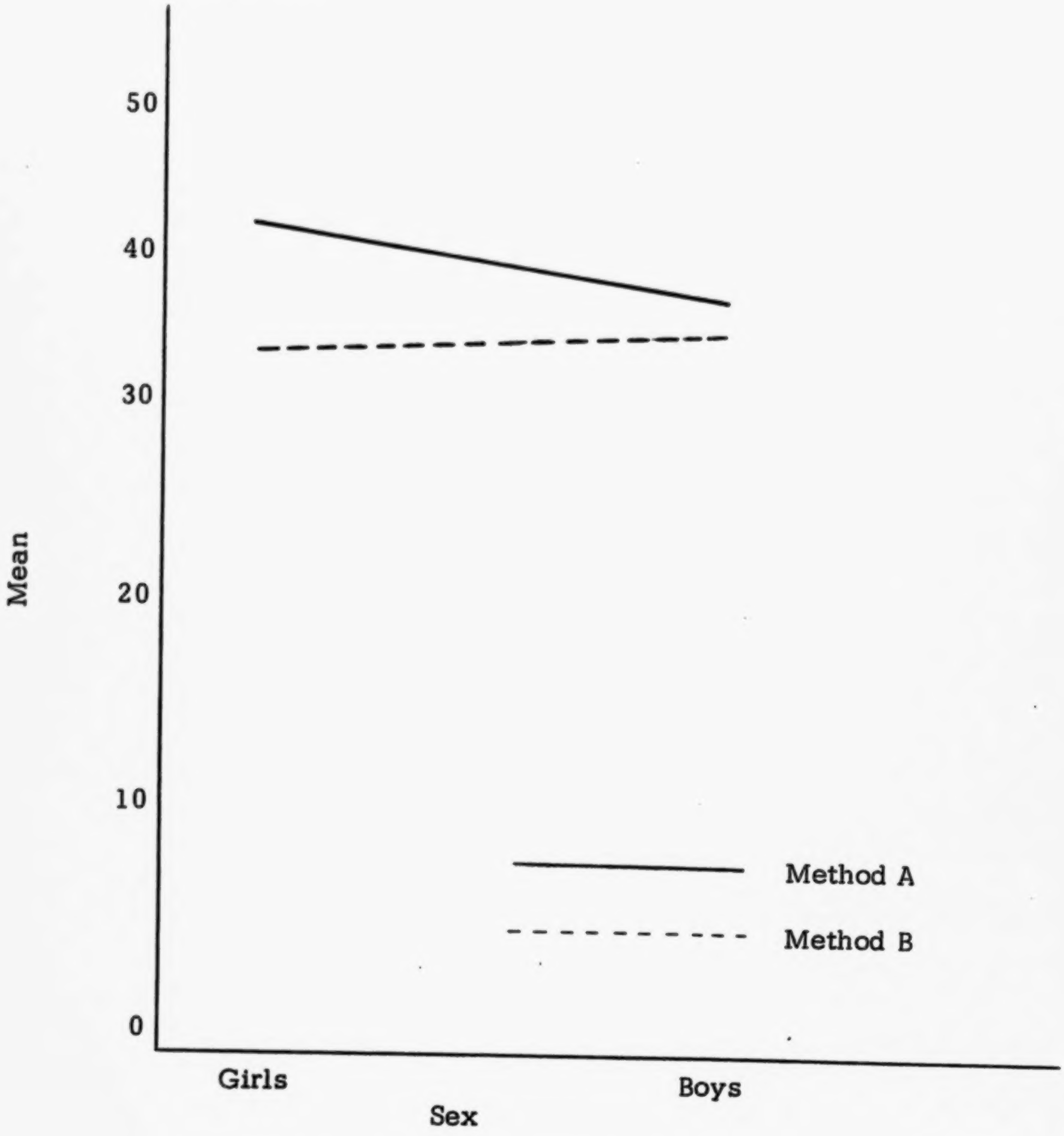


Figure 9 -- Interaction of Method x Sex

(Variable: Language Skills - University of Pittsburgh Diagnostic Rating, 1966)

Methods	Girls	Boys
A	4.08	2.99
B	3.25	3.39

Variable Means

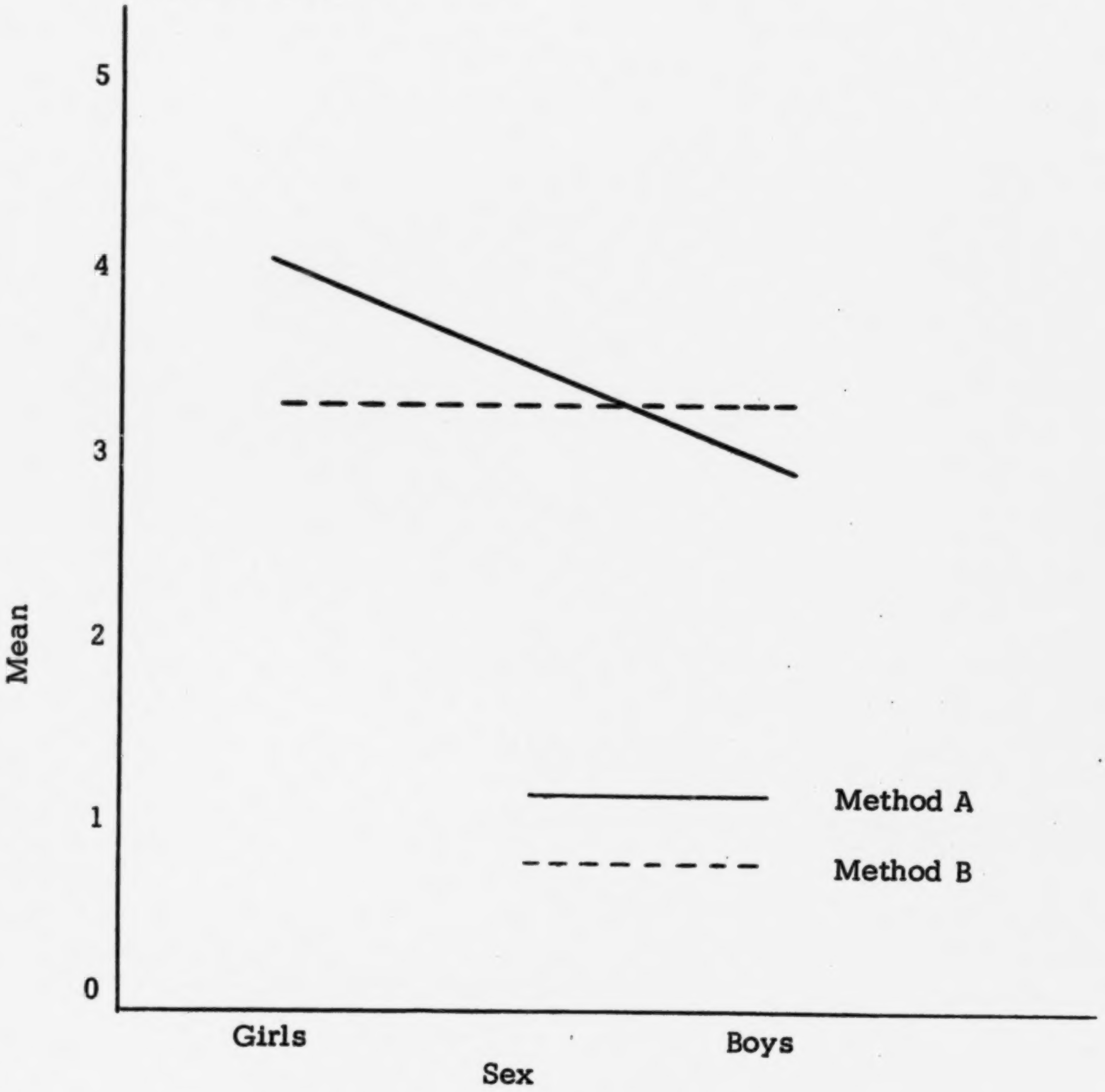


Figure 10 -- Interaction of Method x Sex

(Variable: Eagerness to Read - Inventory of Pupil Book Behavior, Coordinating Center, University of Minnesota)

TABLE 18

SUMMARY OF THE UNIVARIATE ANALYSIS OF VARIANCE FOR TESTING THE SIGNIFICANCE OF INTERACTION BETWEEN SOCIO-ECONOMIC LEVELS AND SEX ON FINAL ACHIEVEMENT DATA IN GRADE TWO

Final Variables	Means of Interaction Terms			
	(1)	(2)	(3)	F
1. Pupil Reading Attitude (San Diego)	18.30	17.58	18.40	.52
Stanford Achievement Tests				
2. Word Meaning	22.01	21.27	22.73	1.03
3. Paragraph Meaning	36.42	36.37	37.94	.45
4. Science and Social Studies Concepts	19.81	19.68	19.19	.21
5. Spelling	19.41	17.91	19.67	1.38
6. Word Study Skills	43.00	41.94	41.88	.27
7. Language	44.51	43.29	43.47	.35
8. Arithmetic Computation	28.12	26.65	27.28	1.04
University of Pittsburgh Diagnostic Rating of Language Outcomes				
9. Understandings	18.69	18.38	18.55	.07
10. Habits	17.70	16.45	17.18	1.00
11. Skills	36.68	35.47	36.57	.32
12. Personal Responses	22.41	22.08	21.76	.16
Minnesota Tests of Creative Thinking				
Task 2: Circles Test				
13. Fluency	8.51	8.60	8.62	.01
14. Flexibility	5.88	6.02	5.38	.33
15. Elaboration	4.90	5.67	5.79	.18
16. Originality	2.94	3.45	3.03	.42
University of Pittsburgh Informal Test Battery				
17. Listening Comprehension	22.49	21.25	21.96	3.66**

TABLE 18 (Continued)

Final Variables	Means of Interaction Terms (1)	(2)	(3)	F
Informal Pupil Inventory of Book Behavior				
18. Number of Books Completely read	14.54	14.13	13.60	.14
19. Number of Books Partially read	.86	.82	1.83	.09
20. Eagerness to read	3.57	3.51	3.22	.85
21. Maturity of Choices	3.31	3.14	3.54	1.65

df for Socio-economic Levels x Sex = 2
df for Error = 154

*Statistically significant at .01
**Statistically significant at .05

	Socio-economic Levels		
	I.	II.	III.
Girls	24.12	21.09	20.17
Boys	23.15	22.59	20.25

Variable Means

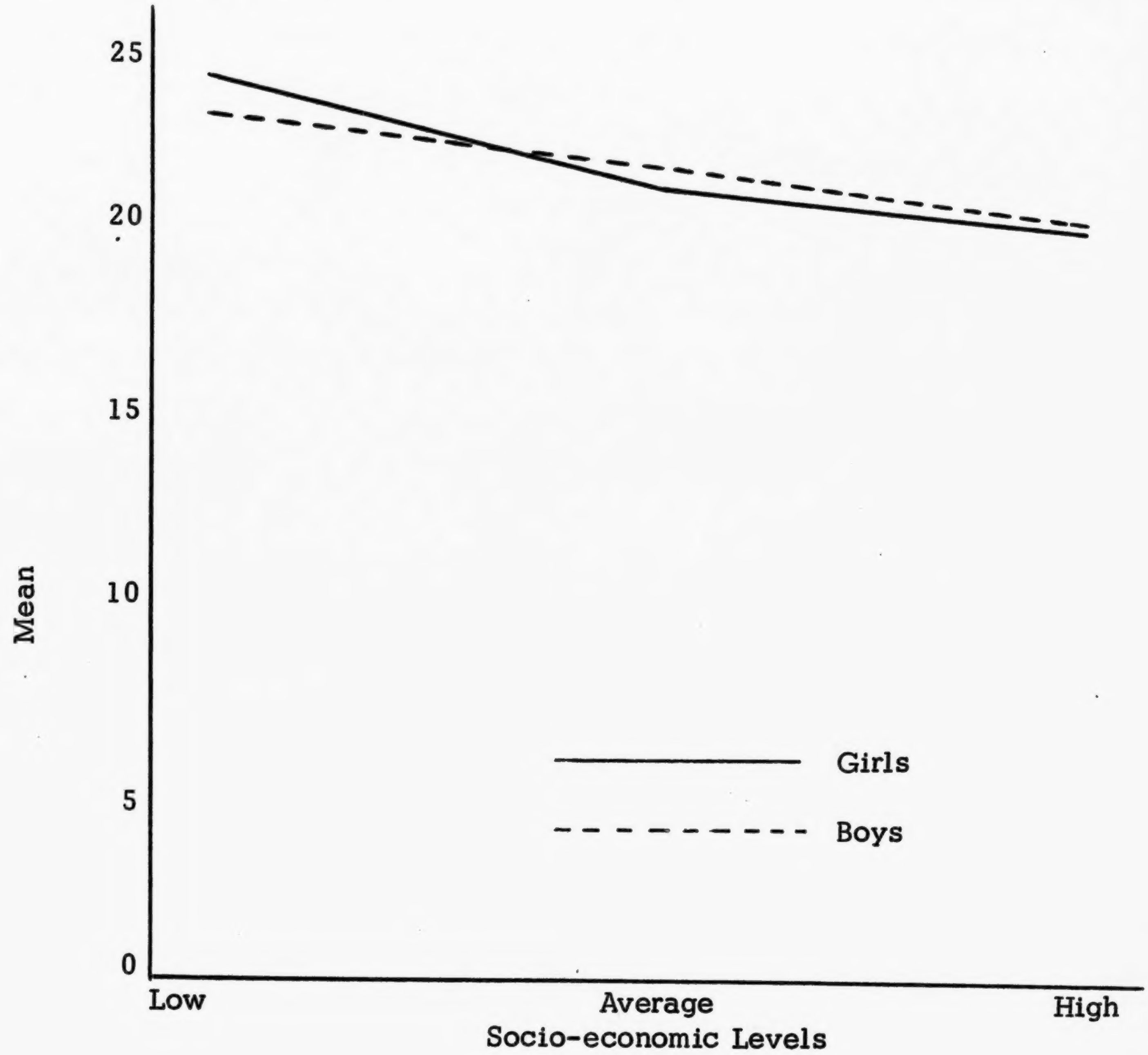


Figure 11 -- Interaction of Socio-economic Levels x Sex

(Variable: Listening Comprehension - Informal Test Battery, University of Pittsburgh, 1966)

TABLE 19

SUMMARY OF DECISIONS ON TESTS OF MAIN EFFECTS AND INTERACTION HYPOTHESES FOR CRITERION VARIABLES AT .01 AND .05 LEVELS, PROBLEM ONE, GRADE TWO

Final Variables	Meth.	S.E.L.	Sex	Meth. x Sex	Meth. x S.E.L.	Meth. x Sex	S.E.L. x Sex
1. Pupil Reading Attitude (San Diego)	**	**	*				
Stanford Achievement Tests							
2. Word Meaning		*					
3. Paragraph Meaning		*				**	
4. Science and Social Studies Concepts	*	*	*				
5. Spelling	**	*	*		*		
6. Word Study Skills		*		**	**		
7. Language		*			**		
8. Arithmetic Computation		*			**		
University of Pittsburgh Diagnostic Rating of Language Outcomes							
9. Understandings	*	*	**				
10. Habits	*	*				**	
11. Skills	*	*				**	
12. Personal Responses	*	*					

TABLE 19 (Continued)

Final Variables	Meth.	S.E.L.	Sex	Meth. x Sex	Meth. x S.E.L.	Meth. x Sex	S.E.L. x Sex
Minnesota Tests of Creative Thinking							
Task 2: Circles Test							
13. Fluency							
14. Flexibility							
15. Elaboration							
16. Originality		**	**				
University of Pittsburgh Informal Test Battery							
17. Listening Comprehension		*					**
Informal Pupil Inventory of Book Behavior							
18. Number of Books Completely read	**	*					
19. Number of Books Partially read					**		
20. Eagerness to read		**	*			*	
21. Maturity of Choices	*	**	*				

*Accept the null hypothesis at .01 level
**Accept the null hypothesis at .05 level

TABLE 20

MEANS FOR EACH EXPERIMENTAL GROUP ON PUPIL READING ATTITUDE, WORD MEANING, AND PARAGRAPH MEANING (GRADE TWO)

Methods	Socio-economic Levels		
	I.	II.	III.
A	1. a. 21.31 b. 27.31 c. 44.25 a. 19.25 b. 26.93 c. 44.56 2.	1. a. 19.63 b. 22.75 c. 39.31 a. 16.94 b. 22.56 c. 37.06 2.	1. a. 19.22 b. 19.11 c. 33.33 a. 16.70 b. 15.60 c. 25.70 2.
B	1. a. 20.06 b. 24.69 c. 40.31 a. 16.75 b. 24.38 c. 42.25 2.	1. a. 16.69 b. 19.56 c. 32.81 a. 16.88 b. 22.00 c. 37.50 2.	1. a. 18.44 b. 19.56 c. 31.00 a. 15.20 b. 19.50 c. 34.80 2.

Key:

Method A = Integrated Experience Approach, Method B = Coordinated Basal Language Arts Approach

Socio-economic Level I = High, Socio-economic Level II = Middle, Socio-economic Level III = Low

1. = Girls, 2. = Boys

a. = Pupil Reading Attitudes (San Diego Pupil Attitude Inventory)
b. = Word Meaning (Stanford Achievement Tests)
c. = Paragraph Meaning (Stanford Achievement Tests)

TABLE 21

MEANS FOR EACH EXPERIMENTAL GROUP ON SCIENCE AND SOCIAL STUDIES CONCEPTS, SPELLING, AND WORD STUDY SKILLS (GRADE TWO)

Methods	Socio-economic Levels		
	I.	II.	III.
A .	1. a. 22.13 b. 25.50 c. 48.31 a. 24.25 b. 22.63 c. 49.50 2.	1. a. 19.68 b. 21.31 c. 44.44 a. 22.31 b. 19.56 c. 43.00 2.	1. a. 14.22 b. 18.00 c. 36.56 a. 19.90 b. 11.50 c. 30.00 2.
B.	1. a. 18.81 b. 20.94 c. 46.44 a. 22.44 b. 17.50 c. 44.06 2.	1. a. 16.63 b. 16.69 c. 40.19 a. 20.25 b. 18.13 c. 44.69 2.	1. a. 15.78 b. 18.56 c. 35.11 a. 18.30 b. 17.70 c. 45.00 2.

Stanford Achievement Test

Key:

Method A = Integrated Experience Approach, Method B = Coordinated Basal Language Arts Approach

Socio-economic Level I = High, Socio-economic Level II = Middle, Socio-economic Level III = Low

1. = Girls, 2. = Boys

a. = Science and Social Studies Concepts
b. = Spelling
c. = Word Study Skills

TABLE 22

MEANS FOR EACH EXPERIMENTAL GROUP ON LANGUAGE AND ARITHMETIC COMPUTATION (GRADE TWO)

Methods	Socio-economic Levels		
	I.	II.	III.
A.	1. a. 53.88 b. 30.75 a. 55.81 b. 29.25 2.	1. a. 45.38 b. 27.19 a. 43.13 b. 28.44 2.	1. a. 37.11 b. 24.22 a. 34.20 b. 22.70 2.
B.	1. a. 50.19 b. 29.50 a. 44.88 b. 29.25 2.	1. a. 39.44 b. 24.44 a. 43.19 b. 27.31 2.	1. a. 37.11 b. 26.00 a. 40.80 b. 29.10 2.

(Stanford Achievement Tests)

Key:

Method A = Integrated Experience Approach, Method B = Coordinated Basal Language Arts Approach

Socio-economic Level I = High, Socio-economic Level II =Middle, Socio-economic Level III = Low

1. = Girls, 2. = Boys

a. = Language
b. = Arithmetic Computation

TABLE 23

MEANS FOR EACH EXPERIMENTAL GROUP ON LANGUAGE UNDERSTANDINGS, HABITS, SKILLS, AND PERSONAL RESPONSES (GRADE TWO)

Methods	Socio-economic Levels		
	I.	II.	III.
A.	1. a. 24.25 b. 23.31 c. 46.31 d. 27.75 a. 22.88 b. 20.00 c. 43.75 d. 26.75 2.	1. a. 21.50 b. 20.00 c. 41.25 d. 25.75 a. 18.81 b. 18.19 c. 36.25 d. 22.25 2.	1. a. 20.22 b. 17.22 c. 38.89 d. 21.78 a. 16.90 b. 13.30 c. 28.60 d. 17.90 2.
B.	1. a. 20.06 b. 18.94 c. 40.50 d. 25.06 a. 17.94 b. 17.19 c. 36.63 d. 21.75 2.	1. a. 15.75 b. 15.13 c. 31.69 d. 20.50 a. 16.19 b. 16.88 c. 35.13 d. 20.94 2.	1. a. 13.56 b. 12.11 c. 25.78 d. 16.22 a. 14.20 b. 13.00 c. 30.10 d. 18.40 2.

Key: (University of Pittsburgh Diagnostic Rating of Language Outcomes, 1966)

Method A = Integrated Experience Approach, Method B=Coordinated Basal Language Arts Approach

Socio-economic Level I=High, Socio-economic Level II=Middle, Socio-economic Level III=Low

1. = Girls, 2. = Boys

a = Understandings, b = Habits, c = Skills, d = Personal Responses

TABLE 24

MEANS FOR EACH EXPERIMENTAL GROUP ON CREATIVE THINKING, FLUENCY, FLEXIBILITY, ELABORATION, AND ORIGINALITY (GRADE TWO)

Methods	Socio-economic Levels		
	I.	II.	III.
A.	1. a. 8.69 b. 6.50 c. 6.50 d. 3.81 a. 6.75 b. 5.06 c. 5.19 d. 3.19 2.	1. a. 9.25 b. 6.00 c. 7.56 d. 4.56 a. 7.94 b. 4.81 c. 4.38 d. 2.25 2.	1. a. 6.78 b. 4.78 c. 2.22 d. 3.00 a. 7.70 b. 6.20 c. 2.50 d. 1.10 2.
B.	1. a. 10.50 b. 6.19 c. 7.81 d. 4.63 a. 9.19 b. 6.06 c. 7.75 d. 4.06 2.	1. a. 11.13 b. 6.94 c. 6.50 d. 3.56 a. 8.81 b. 6.00 c. 6.06 d. 2.69 2.	1. a. 10.44 b. 5.78 c. 7.11 d. 2.22 a. 5.80 b. 4.80 c. 2.70 d. 2.60 2.

Key: (Minnesota Tests of Creative Thinking = Task 2: Circles Test)

Method A= Integrated Experience Approach, Method B= Coordinated Basal Language Arts Approach

Socio-economic Level I=High, Socio-economic Level II=Middle, Socio-economic Level III= Low

1. = Girls, 2. = Boys

a. = Fluency, b. = Flexibility, c. = Elaboration, d. = Originality

TABLE 25

MEANS FOR EACH EXPERIMENTAL GROUP ON LISTENING COMPREHENSION, BOOKS READ COMPLETELY, AND BOOKS READ PARTIALLY (GRADE TWO)

Methods	Socio-economic Levels		
	I.	II.	III.
A.	1. a. 24.63 b. 14.63 c. .19 a. 23.63 b. 11.13 c. .88 2.	1. a. 21.63 b. 15.44 c. .50 a. 22.19 b. 14.44 c. 1.00 2.	1. a. 20.56 b. 10.22 c. .89 a. 19.10 b. 17.80 c. 1.50 2.
B.	1. a. 23.63 b. 15.25 c. 1.06 a. 22.69 b. 16.44 c. 1.31 2.	1. a. 20.56 b. 15.13 c. .31 a. 23.00 b. 15.44 c. .44 2.	1. a. 19.78 b. 14.67 c. .78 a. 21.40 b. 18.50 c. .70 2.

Key:

Method A = Integrated Experience Approach, Method B = Coordinated Basal Language Arts Approach

Socio-economic Level I = High, Socio-economic Level II = Middle, Socio-economic Level III = Low

1. = Girls, 2. = Boys

a. = Listening Comprehension (Informally Devised, Univ. of Pittsburgh, for Grade 2)
b. = Books Read Completely (Pupil Inventory of Books-Coordinating Center, Univ. of Minnesota)
c. = Books Read Partially (Pupil Inventory of Books-Coordinating Center, Univ. of Minnesota)

TABLE 26

MEANS FOR EACH EXPERIMENTAL GROUP ON EAGERNESS TO READ AND MATURITY OF READING CHOICES (GRADE TWO)

Methods	Socio-economic Levels		
	I.	II.	III.
A.	1. a. 4.50 b. 4.44 a. 3.38 b. 3.38 2.	1. a. 4.31 b. 4.00 a. 3.19 b. 3.25 2.	1. a. 3.44 b. 4.00 a. 2.40 b. 2.70 2.
B.	1. a. 3.81 b. 3.81 a. 3.44 b. 3.19 2.	1. a. 3.38 b. 2.75 a. 2.94 b. 7.19 2.	1. a. 3.44 b. 6.11 a. 2.60 b. 5.70 2.

Key:

Method A = Integrated Experience Approach, Method B = Coordinated Basal Language Arts Approach

Socio-economic Level I = High, Socio-economic Level II = Middle, Socio-economic Level II = Low

1. = Girls, 2. = Boys

a. = Eagerness to Read (Pupil Inventory of Books - Coordinating Center, Univ. of Minnesota)
b. = Maturity of Reading Choices (Pupil Inventory of Books - Coordinating Center, Univ. of Minnesota)

The second main effects hypothesis involved determining if there were statistically significant differences between the population subsample. As shown in Table 27, when considering accuracy and rate of oral reading, word pronunciation, phonetically regular words, and aspects of creative writing, there were no statistically significant differences at the .01 or .05 level, when tested using a one way multivariate analyses of variance by methods design.

An examination of variable means, per method, in Table 27 does, however, reveal that on all variables except 25 and 29, pupils in the Integrated Experience Approach to Communication had higher mean scores than pupils in the Coordinated Basal Language Arts Approach.

TABLE 27

SUMMARY OF THE MULTIVARIATE ANALYSIS OF VARIANCE FOR TESTING THE SIGNIFICANCE OF DIFFERENCE BETWEEN SECOND GRADERS IN TWO METHODS ON FINAL ACHIEVEMENT DATA

Final Variables	Means		S.D.		F
	Method A	Method B	Method A	Method B	Multivariate
Gilmore Oral Reading					
1. Accuracy	43.82	41.04	14.63	10.56)	
2. Rate	92.18	91.14	33.05	32.96)	
3. Gates Word Pronunciation Test	27.72	25.94	7.41	5.69)	3.13
4. Fry Phonetically Regular				)	
Words Test	32.59	32.66	11.95	10.30)	
Creative Writing Measure				)	
				)	
5. Running Words	57.22	41.08	24.27	25.86)	
6. Different Words	41.35	31.08	20.08	19.09)	
7. Words Spelled Correctly	47.43	35.60	24.12	23.91)	
8. Polysyllabic Words	2.24	2.28	1.81	2.28)	
9. Mechanics Ratio	70.67	66.70	21.06	20.64)	

Number of pupils in Method A = 51, Number of pupils in Method B = 50 (Subsample)

Method A = Integrated Experience Approach to Communication, Method B = Coordinated Basal Language Arts Approach

df for Method = 1, df for Error = 89

*Statistically significant .01
**Statistically significant .05

Problem Two: Analyses of the Effects of Methods, Mental Age Levels and Sex on Pupil Achievement in Grade Two

The main effect and interaction hypotheses in Problem Two are considered in view of ten criterion variables involving the total pupil population, sampled for proportionality in analyses. Sample size per cell, per effect, reflects population stratification in raw score thirds on the Pintner-Cunningham Test of Mental Ability (administered in Grade One). In examining the effects of Method, Sex, and Method x Sex in both Problems One and Two, F ratios were comparable. In each problem, between methods populations were representatively identical. Therefore, only the main effect and interaction hypotheses specifically related to mental age will be described in more depth.

The effects of Mental Age levels on pupil achievement on ten criterion variables are listed in Table 28. As shown, statistically significant differences at the .01 level were evident in word study skills. At the .05 level there were statistically significant differences between pupils in three mental age levels on word meaning, science and social studies concepts, and language. In paragraph meaning, spelling, arithmetic computation, arithmetic concepts, and listening no statistically significant differences are apparent. Consistently, though, on each variable except number 1, pupils at Mental Age Level 1 had higher mean scores than pupils at Mental Age Levels 2 and 3. Pupils in Mental Age Level 2 had higher mean scores than those in Mental Age Level 3.

The second order and first order interaction hypotheses of Method x Mental Age Levels x Sex; Method x Mental Age Levels; and Mental Age Levels x Sex are summarized in Tables 29, 30, 31 and 32. An inspection of Table 29 reveals that there are no statistically significant interactions between Method x Mental Age Levels x Sex on the criterion variables listed. Table 30, which summarizes tests of significance of the interaction between Method x Mental Age Levels, also, reflects no significant interactions. As shown in Table 31, no significant interactions between Mental Age Levels x Sex were reported on the ten criterion variables.

Table 32 is included as a summary of all decisions on tests of main effects and interaction hypotheses. In order to examine variable means per experimental treatment more specifically, Tables 33, 34, and 35 are provided. In most instances, pupils in the Integrated Experience Approach had higher mean scores than pupils in the Coordinated Basal Language Arts Approach within mental age levels. Girls in the Integrated Experience Approach had generally higher scores than girls in the Coordinated Basal Language Arts Approach. Similar patterns are noted for boys.

TABLE 28

SUMMARY OF THE UNIVARIATE ANALYSIS OF VARIANCE FOR TESTING THE SIGNIFICANCE OF DIFFERENCE BETWEEN SECOND GRADE PUPILS WITHIN THREE MENTAL AGE LEVELS ON FINAL ACHIEVEMENT DATA

	Grand Mean			
Final Variables	M.A.L. 1	M.A.L. 2	M.A.L. 3	F
1. Pupil Reading Attitude (San Diego)	18.41	17.83	18.68	.15
Stanford Achievement Tests				
2. Word Meaning	24.50	23.67	20.38	4.21**
3. Paragraph Meaning	40.83	38.16	35.34	2.18
4. Science & Social Studies Concepts	22.00	19.62	18.56	3.33**
5. Spelling	21.37	18.37	17.98	2.04
6. Word Study Skills	47.17	39.50	37.87	6.02*
7. Language	47.96	42.14	41.65	3.20**
8. Arithmetic Computation	27.63	26.71	25.38	.80
9. Arithmetic Concepts	24.38	22.09	20.91	1.63
University of Pittsburgh				
10. Listening	22.58	22.54	20.91	2.60

Number of pupils in M.A.L. 1 = 24 (Sampled down for proportionality)
Number of pupils in M.A.L. 2 = 24
Number of pupils in M.A.L. 3 = 22

M.A.L. 1 = upper mental age level
M.A.L. 2 = middle mental age level
M.A.L. 3 = low mental age level

df for Mental age Level = 2
df for Error = 58

*Statistically significant at .01
**Statistically significant at .05

TABLE 29

SUMMARY OF THE UNIVARIATE ANALYSIS OF VARIANCE FOR TESTING THE SIGNIFICANCE OF THE INTERACTION BETWEEN METHOD, MENTAL AGE LEVELS, AND SEX ON FINAL ACHIEVEMENT DATA IN SECOND GRADE

Final Variables	Means of Interaction Terms (1)	(2)	(3)	F
1. Pupil Reading Attitude (San Diego)	17.82	18.16	18.95	.37
Stanford Achievement Tests				
2. Word Meaning	22.06	22.06	24.44	1.58
3. Paragraph Meaning	36.94	36.34	40.95	1.72
4. Science & Social Studies Concepts	18.91	20.62	20.66	1.06
5. Spelling	19.00	18.09	20.63	.94
6. Word Study Skills	41.85	40.18	42.50	.35
7. Language	44.01	42.17	42.27	.70
8. Arithmetic Computation	25.83	25.49	24.75	1.42
9. Arithmetic Concepts	21.95	22.08	23.35	.29
University of Pittsburgh				
10. Listening	21.45	22.00	22.61	.92

Number of pupils = 70 (Sampled down for proportionality)

df for Method x Mental Age x Sex = 2
df for Error = 58

*Statistically significant at .01
**Statistically significant at .05

TABLE 30

SUMMARY OF THE UNIVARIATE ANALYSIS FOR TESTING THE SIGNIFICANCE OF INTERACTION BETWEEN METHOD AND MENTAL AGE LEVELS ON FINAL ACHIEVEMENT DATA IN SECOND GRADE

Final Variables	Means of Interaction Terms (1)	(2)	(3)	F
1. Pupil Reading Attitude (San Diego)	19.16	17.00	18.77	1.55
Stanford Achievement Tests				
2. Word Meaning	22.72	22.47	23.36	.17
3. Paragraph Meaning	36.47	39.30	38.56	.64
4. Science & Social Studies Concepts	19.15	21.11	19.92	1.05
5. Spelling	18.90	20.40	18.42	.62
6. Word Study Skills	39.42	44.92	40.20	2.22
7. Language	42.82	43.82	45.09	.32
8. Arithmetic Computation	25.29	27.79	26.63	.94
9. Arithmetic Concepts	20.62	24.24	22.52	1.71
University of Pittsburgh				
10. Listening	21.51	22.14	22.41	.58

Number of pupils = 70 (Sampled down for proportionality)

df for Method x Mental Age Levels = 2
df for Error = 58

*Statistically significant at .01
**Statistically significant at .05

TABLE 31

SUMMARY OF THE UNIVARIATE ANALYSIS OF VARIANCE FOR TESTING THE SIGNIFICANCE OF THE INTERACTION BETWEEN SEX AND MENTAL AGE LEVELS ON FINAL ACHIEVEMENT DATA IN SECOND GRADE

Final Variables	Means of Interaction Terms (1)	(2)	(3)	F
1. Pupil Reading Attitude (San Diego)	18.28	19.03	17.65	.55
Stanford Achievement Tests				
2. Word Meaning	21.89	23.14	23.52	.51
3. Paragraph Meaning	38.25	38.75	37.34	.27
4. Science & Social Studies Concepts	19.27	20.73	20.19	.58
5. Spelling	19.92	18.50	19.30	.30
6. Word Study Skills	43.49	41.15	39.89	.98
7. Language	42.62	43.53	42.99	.39
8. Arithmetic Computation	27.69	25.27	26.75	.88
9. Arithmetic Concepts	23.70	22.00	21.68	.71
University of Pittsburgh				
10. Listening	22.43	22.38	21.25	1.42

Number of pupils = 70

df for Mental Age x Sex = 2
df for Error = 58

*Statistically significant at .01
**Statistically significant at .05

TABLE 32

SUMMARY OF DECISIONS ON TESTS OF MAIN EFFECTS AND INTERACTION HYPOTHESES FOR CRITERION VARIABLES, PROBLEM TWO, GRADE TWO

Final Variables	Meth.	Mental Age Levels	Sex	Meth. x Sex	Meth. x M.A.L.	Meth. x Sex
1. Pupil Reading Attitude (San Diego)	**					
Stanford Achievement Tests						
2. Word Meaning		**				
3. Paragraph Meaning						
4. Science & Social Studies Concepts	*	**				
5. Spelling	**					
6. Word Study Skills		*				
7. Language	**	**				
8. Arithmetic Computation						
9. Arithmetic Concepts						
University of Pittsburgh						
10. Listening						

*Accept the null hypothesis at .01 level
**Accept the null hypothesis at .05 level

TABLE 33

MEANS FOR EACH EXPERIMENTAL GROUP ON PUPIL READING ATTITUDE, WORD MEANING, AND PARAGRAPH MEANING (GRADE TWO)

Methods	Mental Age Levels		
	1.	2.	3.
A.	1. a. 20.33 b. 25.67 c. 42.33 a. 17.17 b. 24.00 c. 41.33 2.	1. a. 20.83 b. 23.83 c. 36.83 a. 19.83 b. 24.67 c. 35.83 2.	1. a. 21.80 b. 25.20 c. 39.20 a. 19.80 b. 18.00 c. 32.00 2.
B.	1. a. 20.83 b. 24.17 c. 39.00 a. 15.33 b. 24.17 c. 40.67 2.	1. a. 17.67 b. 21.83 c. 38.17 a. 13.00 b. 24.33 c. 41.83 2.	1. a. 17.16 b. 17.17 c. 28.33 a. 16.00 b. 21.17 c. 41.83 2.

Key:

Method A=Integrated Experience Approach, Method B=Coordinated Basal Language Arts Approach

Mental Age Level 1 = High, Mental Age Level 2 = Middle, Mental Age Level 3 = Low

1. = Girls, 2. = Boys

a. = Pupil Reading Attitude (San Diego Pupil Attitude Inventory)
b. = Word Meaning (Stanford Achievement Tests)
c. = Paragraph Meaning (Stanford Achievement Tests)

TABLE 34

MEANS FOR EACH EXPERIMENTAL GROUP ON SCIENCE AND SOCIAL STUDIES CONCEPTS, SPELLING, AND WORD STUDY (GRADE TWO)

Methods	Mental Age Levels		
	1.	2.	3.
A.	1. a. 24.33 b. 22.83 c. 51.17 a. 23.33 b. 24.50 c. 50.67 2.	1. a. 16.83 b. 20.67 c. 42.00 a. 22.17 b. 17.67 c. 33.50 2.	1. a. 19.20 b. 20.80 c. 38.20 a. 19.20 b. 15.80 c. 35.60 2.
B.	1. a. 19.33 b. 18.33 c. 39.67 a. 21.00 b. 19.83 c. 47.17 2.	1. a. 19.16 b. 17.33 c. 38.17 a. 20.33 b. 17.83 c. 44.33 2.	1. a. 16.50 b. 15.17 c. 31.50 a. 19.33 b. 20.17 c. 46.17 2.

(Stanford Achievement Tests)

Key:

Method A=Integrated Experience Approach, Method B=Coordinated Basal Language Arts Approach

Mental Age Level 1 = High, Mental Age Level 2 = Middle, Mental Age Level 3 = Low

1. = Girls, 2. = Boys

a. = Science and Social Studies Concepts
b. = Spelling
c. = Word Study

TABLE 35

MEANS FOR EACH EXPERIMENTAL GROUP ON LANGUAGE, ARITHMETIC COMPUTATION, ARITHMETIC CONCEPTS, AND LISTENING (GRADE TWO)

Methods	Mental Age Levels		
	1.	2.	3.
A.	1. a. 47.50 b. 27.83 c. 26.83 d. 23.50 a. 48.67 b. 32.00 c. 27.33 d. 22.67 2.	1. a. 45.67 b. 27.17 c. 22.50 d. 22.33 a. 38.33 b. 25.83 c. 19.83 d. 22.50 2.	1. a. 46.80 b. 28.80 c. 22.60 d. 21.60 a. 40.00 b. 24.20 c. 21.20 d. 21.80 2.
B.	1. a. 48.50 b. 24.00 c. 18.33 d. 21.50 a. 45.67 b. 26.67 c. 25.00 d. 22.67 2.	1. a. 43.50 b. 27.67 c. 21.50 d. 22.67 a. 41.00 b. 26.17 c. 24.50 d. 22.67 2.	1. a. 37.00 b. 21.50 c. 15.00 d. 17.83 a. 42.00 b. 27.00 c. 24.00 d. 22.50 2.

(Stanford Achievement Tests)

Key:

Method A=Integrated Experience Approach, Method B=Coordinated Basal Language Arts Approach

Mental Age Level 1 = High, Mental Age Level 2 = Middle, Mental Age Level 3 = Low

1. = Girls, 2. = Boys

a. = Language, b. = Arithmetic Computation, c. = Arithmetic Concepts, d. = Listening

B. Analysis of Data and Findings At the End of Third Grade

Problem One: Analysis of the Effects of Methods, Socio-economic Levels, and Sex on Pupil Achievement in Grade Three

Hypotheses in Problem One are considered in view of twenty-nine criterion variables. The first thirteen criterion variables, listed, involved evaluations of the total pupil population continuing in this investigation in third grade. The effects of method were also examined in view of the criterion variables numbered fourteen through twenty nine, but only with the selected continuing subsample of the total pupil population.

The first main effects hypotheses for variables one to thirteen involved the comparison between total pupils in Method A, the Integrated Experience Approach to Communication and total pupils in Method B, the Coordinated Basal Language Arts Approach. The summary of findings in testing the effects of method is presented in Table 36. No statistically significant differences were noted between the pupils in Method A and Method B on the thirteen criterion variables cited.

The second main effect hypothesis in this problem involved determining if there were statistically significant differences between the total pupils within Socio-Economic Levels I, II, and III. As shown in Table 37, there were statistically significant differences between the pupils in the socio-economic stratifications at .01 level on the seven subsections of the Stanford Achievement Test and on all subsections of the University of Pittsburgh Diagnostic Rating of Language Outcomes. In every instance when statistically significant differences were apparent, pupils in socio-economic Level I had higher mean scores than pupils in Socio-economic Levels II and III. Consistently, too, pupils in Socio-economic Level II had higher mean scores than pupils in Socio-economic Level III.

Table 38 is a summary of tests for third main effects hypothesis, determining whether there were statistically significant differences between total boys and girls. At .01 differences were noted between the sexes on pupil reading attitude and science and social studies concepts. Girls had significantly higher positive mean scores in their attitudes toward reading while the mean scores of boys were significantly higher than those of girls on the science and social studies concepts, measured by the Stanford Achievement Tests.

In Tables 39, 40, 41, and 42 second order and first order interaction hypotheses are tested. As revealed in Table 39, no significant interaction between Method x Socio-economic Levels x Sex is noted.

TABLE 36

SUMMARY OF THE UNIVARIATE ANALYSIS OF VARIANCE FOR TESTING THE SIGNIFICANCE OF DIFFERENCE BETWEEN THIRD GRADERS IN TWO METHODS ON FINAL ACHIEVEMENT DATA

Final Variables	Grand Mean Method A	 Method B	F
1. Pupil Reading Attitude (San Diego)	19.24	18.96	.13
Stanford Achievement Tests			
2. Word meaning	26.28	27.24	1.31
3. Paragraph Meaning	44.32	45.22	.21
4. Science & Social Studies Concepts	25.04	24.30	1.91
5. Spelling	24.96	22.74	.002
6. Word Study Skills	44.00	46.72	1.57
7. Language	53.10	52.26	.54
8. Arithmetic Computation	40.52	40.76	.007
University of Pittsburgh Diagnostic Rating of Language Outcomes			
9. Understandings	20.70	20.36	.17
10. Habits	21.38	20.52	.37
11. Skills	28.53	26.31	1.88
12. Personal Responses	21.93	21.29	.29
13. Listening Comp.	22.14	21.46	.99

Number of pupils in Method A = 81 (Sampled down for proportionality)
Number of pupils in Method B = 85

Method A = Integrated Experience Approach to Communication
Method B = Coordinated Basal Language Arts Approach

df for Method = 1
df for Error = 154

*Statistically significant at .01
**Statistically significant at .05

TABLE 37

SUMMARY OF THE UNIVARIATE ANALYSIS OF VARIANCE FOR TESTING THE SIGNIFICANCE OF DIFFERENCE BETWEEN TOTAL THIRD GRADERS WITHIN SOCIO-ECONOMIC LEVELS ON FINAL ACHIEVEMENT DATA

Final Variables	Grand Mean S.E.L. I	Grand Mean S.E.L. II	Grand Mean S.E.L. III	F
1. Pupil Reading Attitude (San Diego)	19.64	18.50	19.17	1.33
Stanford Achievement Tests				
2. Word Meaning	29.94	26.92	23.42	25.67*
3. Paragraph Meaning	50.47	44.83	39.00	29.21*
4. Science & Social Studies Concepts	27.63	25.24	21.14	23.74*
5. Spelling	24.72	23.69	22.12	5.27*
6. Word Study Skills	52.94	45.52	37.62	26.55*
7. Language	60.79	52.16	45.08	38.28*
8. Arithmetic Computation	46.78	38.84	36.30	22.83*
University of Pittsburgh Diagnostic Rating of Language Outcomes				
9. Understandings	23.11	21.52	16.96	15.20*
10. Habits	23.14	22.23	17.47	16.26*
11. Skills	31.40	28.64	22.22	20.46*
12. Personal Responses	24.78	22.75	17.31	22.81*
13. Listening Comp.	23.04	21.74	20.63	6.38*

Number of pupils in S.E.L. I = 64
Number of pupils in S.E.L. II = 64 (Sampled down for proportionality)
Number of pupils in S.E.L. III = 38

S.E.L. I = upper socio-economic level
S.E.L. II = middle socio-economic level
S.E.L. III = low socio-economic level

df for Socio-economic Level = 2
df for Error = 154

*Statistically significant at .01
**Statistically significant at .05

TABLE 38

SUMMARY OF THE UNIVARIATE ANALYSIS OF VARIANCE FOR TESTING THE SIGNIFICANCE OF DIFFERENCE BETWEEN TOTAL GIRLS AND TOTAL BOYS IN GRADE THREE ON FINAL ACHIEVEMENT DATA

Final Variables	Grand Means		F
	Boys	Girls	
1. Pupil Reading Attitude (San Diego)	17.84	20.36	18.13*
Stanford Achievement Tests			
2. Word Meaning	26.78	26.74	.01
3. Paragraph Meaning	43.88	45.66	.77
4. Science and Social Studies Concepts	26.30	23.04	20.86*
5. Spelling	22.81	24.89	3.70
6. Word Study Skills	45.52	45.20	.25
7. Language	51.71	53.65	.92
8. Arithmetic Computation	40.73	40.55	.44
University of Pittsburgh Diagnostic Rating of Language Outcomes			
9. Understandings	19.56	21.50	3.19
10. Habits	20.08	21.82	2.80
11. Skills	26.72	28.12	.65
12. Personal Responses	21.00	22.22	1.05
13. Listening Comp.	21.88	21.72	.12

Number of boys = 81 (Sampled down for proportionality)
Number of girls = 85

df for Sex = 1
df for Error = 154

*Statistically significant at .01
**Statistically significant at .05

TABLE 39

SUMMARY OF THE UNIVARIATE ANALYSIS OF VARIANCE FOR TESTING THE SIGNIFICANCE OF INTERACTION BETWEEN METHOD, SOCIO-ECONOMIC LEVELS, AND SEX ON FINAL ACHIEVEMENT DATA (GRADE THREE)

Final Variables	Means of Interaction Terms (1)	(2)	(3)	F
1. Pupil Reading Attitude (San Diego)	18.91	18.87	19.52	.36
Stanford Achievement Tests				
2. Word meaning	25.99	26.41	27.88	2.14
3. Paragraph Meaning	43.96	44.60	45.75	.72
4. Science & Social Studies Concepts	24.23	23.97	25.81	1.98
5. Spelling	22.61	23.89	25.04	2.22
6. Word Study Skills	43.49	44.60	47.98	2.30
7. Language	51.83	52.37	53.84	.60
8. Arithmetic Computation	39.40	40.40	39.17	1.23
University of Pittsburgh Diagnostic Rating of Language Outcomes				
9. Understandings	19.64	20.55	21.40	1.22
10. Habits	19.91	21.06	21.88	1.82
11. Skills	26.39	27.41	28.46	.95
12. Personal Responses	21.11	21.58	22.17	.43
13. Listening Comp.	21.50	21.45	22.45	1.08

df for Method, Socio-economic Levels x Sex = 2
df for Error = 154

*Statistically significant at .01
**Statistically significant at .05

TABLE 40

SUMMARY OF THE UNIVARIATE ANALYSIS OF VARIANCE FOR TESTING THE SIGNIFICANCE OF THE INTERACTION BETWEEN METHOD AND SOCIO-ECONOMIC LEVELS ON FINAL ACHIEVEMENT DATA (GRADE THREE)

Final Variables	Means of Interaction Terms (1)	(2)	(3)	F
1. Pupil Reading Attitude (San Diego)	19.22	18.58	19.49	.79
Stanford Achievement Tests				
2. Word meaning	27.61	26.06	26.49	1.91
3. Paragraph Meaning	46.09	44.57	43.65	1.39
4. Science & Social Studies Concepts	25.18	24.78	24.05	.54
5. Spelling	23.52	23.56	24.47	.50
7. Language	54.02	51.76	52.26	1.06
8. Arithmetic Computation	42.61	39.57	39.74	2.39
University of Pittsburgh Diagnostic Rating of Language Outcomes				
9. Understandings	20.84	20.09	20.66	.33
10. Habits	21.13	19.51	22.21	3.69**
11. Skills	27.06	25.58	25.22	3.78**
12. Personal Responses	21.44	20.80	20.98	1.03
13. Listening Comp.	21.49	21.57	21.26	.91

df for Method x Socio-economic Levels = 2
df for Error = 154

*Statistically significant at .01
**Statistically significant at .05

Tests of the interactions of Method x Socio-economic Levels are reported in Table 40. Inspection reveals that significant interactions at .05 level occurred in the achievement of language habits and language skills. Figures 12 and 13 are graphic presentations of these interactions. Each figure shows that non-parallelity exists for Method x Sex.

Table 41 indicates statistically significant interactions at .05 level between Method x Sex on pupil reading attitude and spelling. Figures 14 and 15 are graphic presentations of these interactions. Inspection of figures reveals that nonparallelity is obvious between Method x Sex in each variable.

Inspection of Table 42 reveals that there is a significant interaction between Sex x Socio-economic Levels on pupil reading attitude. Non-parallelity, as charted in Figure 16 is obvious.

Table 43 is included as a summary of the decisions on tests of main effects and interaction hypotheses for the thirteen variables in Problem One, Grade Three. In order to examine variable means per experimental treatment group more specifically, Tables 44, 45, 46, and 47 are provided.

Inspection of the tables for cell means reveals that much inconsistency in achievement, per variable, exists between methods. Generally pupil mean scores, both boys and girls, were higher in the basal approach than in the coordinated language arts approach in the average socio-economic level groups. Consistently, too, boys in Socio-economic Level III taught through a Coordinated Basal Language Arts Approach had higher mean scores than boys taught through an Integrated Experience Approach.

The second main effects hypothesis involved determining if there were statistically significant differences between the population subsample on method. As shown in Table 48, when considering aspects of creative thinking, oral reading, and creative writing there were no statistically significant differences at the .01 level, when tested using a one way multivariate analysis of variance by method design. Significant differences were found at the .05 level. Variables 17, 22, 23, and 27 reflect, however, a mean score advantage for pupils in Method B.

Methods	Socio-economic Levels		
	Low	Middle	High
A	18.68	21.21	23.75
B	16.28	23.22	22.53

Variable Means

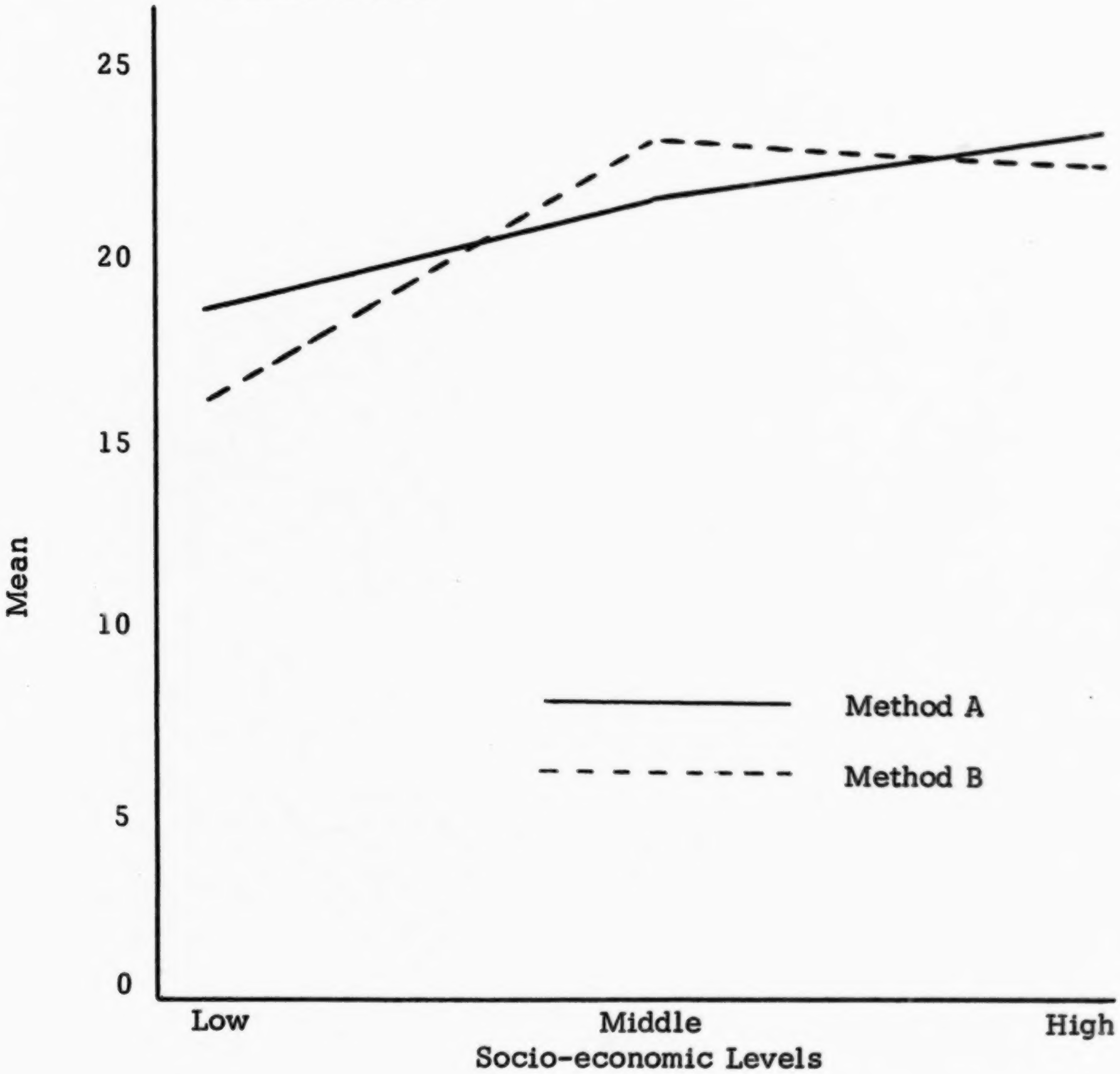


Figure 12 -- Interaction of Method x Socio-economic Levels

(Variable: Language Habits - University of Pittsburgh Diagnostic Rating of Language Outcomes, 1967)

	Socio-economic Levels		
Methods	Low	Middle	High
A	25.52	27.90	32.16
B	18.92	29.38	30.65

Variable Means

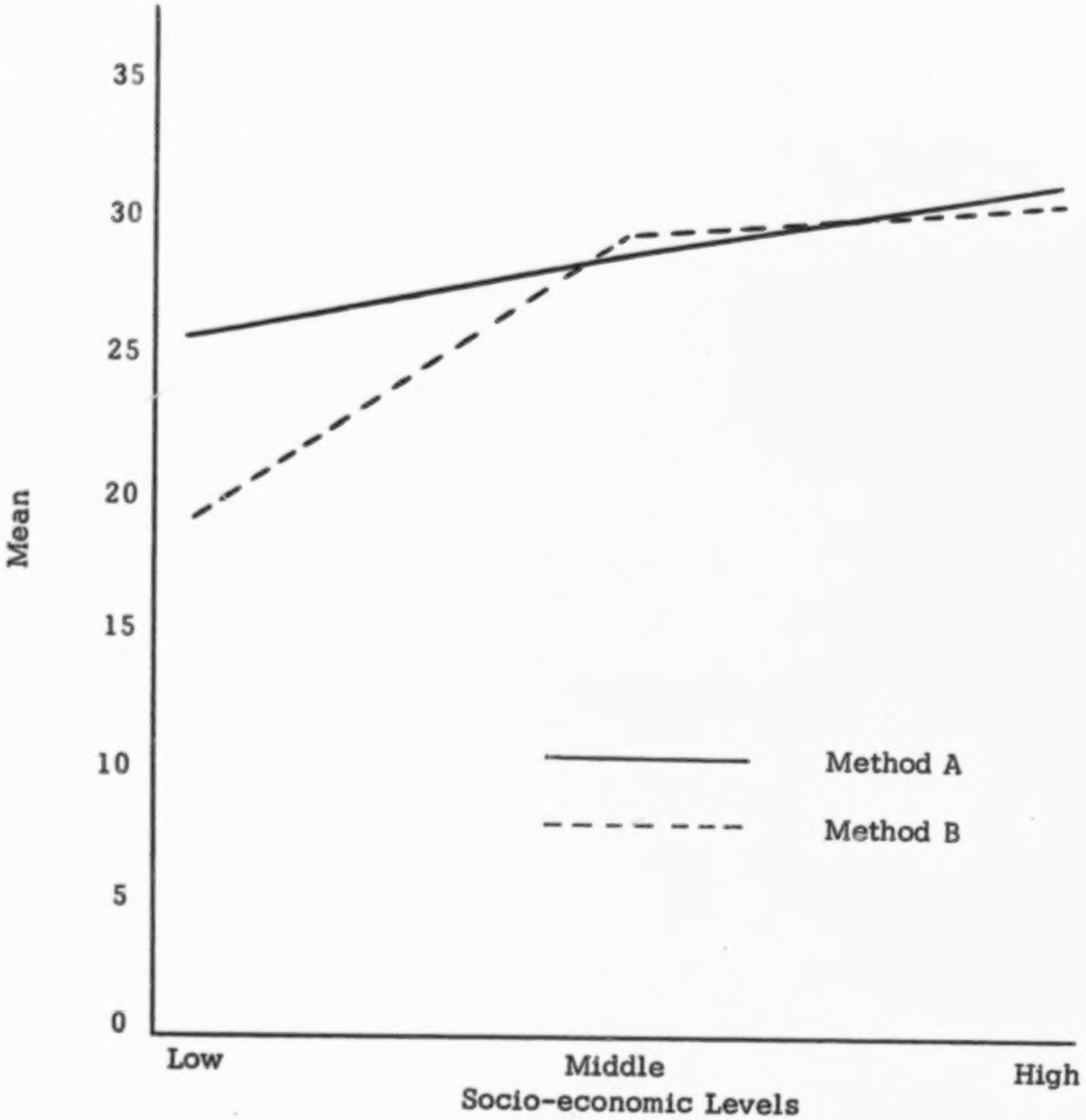


Figure 13 -- Interaction of Method x Socio-economic Levels

(Variable: Language Skills - University of Pittsburgh Diagnostic Rating of Language Outcomes, 1967)

TABLE 41

SUMMARY OF THE UNIVARIATE ANALYSIS OF VARIANCE FOR TESTING THE SIGNIFICANCE OF THE INTERACTION BETWEEN METHOD AND SEX ON FINAL ACHIEVEMENT DATA IN GRADE THREE

Final Variables	(1)	(2)	F
1. Pupil Reading Attitude (San Diego)	19.90	18.30	5.72**
Stanford Achievement Tests			
2. Word meaning	27.18	26.26	.61
3. Paragraph Meaning	44.89	44.65	.01
4. Science & Social Studies Concepts	24.67	24.67	.30
5. Spelling	24.96	22.74	4.44**
6. Word Study Skills	45.79	44.93	.002
7. Language	52.77	52.59	.02
8. Arithmetic Computation	41.25	40.03	.29
University of Pittsburgh Diagnostic Rating of Language Outcomes			
9. Understandings	20.93	20.13	.38
10. Habits	21.10	20.80	.007
11. Skills	27.67	27.17	.06
12. Personal Responses	21.60	21.64	.05
13. Listening Comp.	21.92	21.68	.007

df for Method x Sex = 1
df for Error = 154

*Statistically significant at .01
**Statistically significant at .05

Methods	Girls	Boys
A	21.21	18.18
B	19.43	18.49

Variable Means

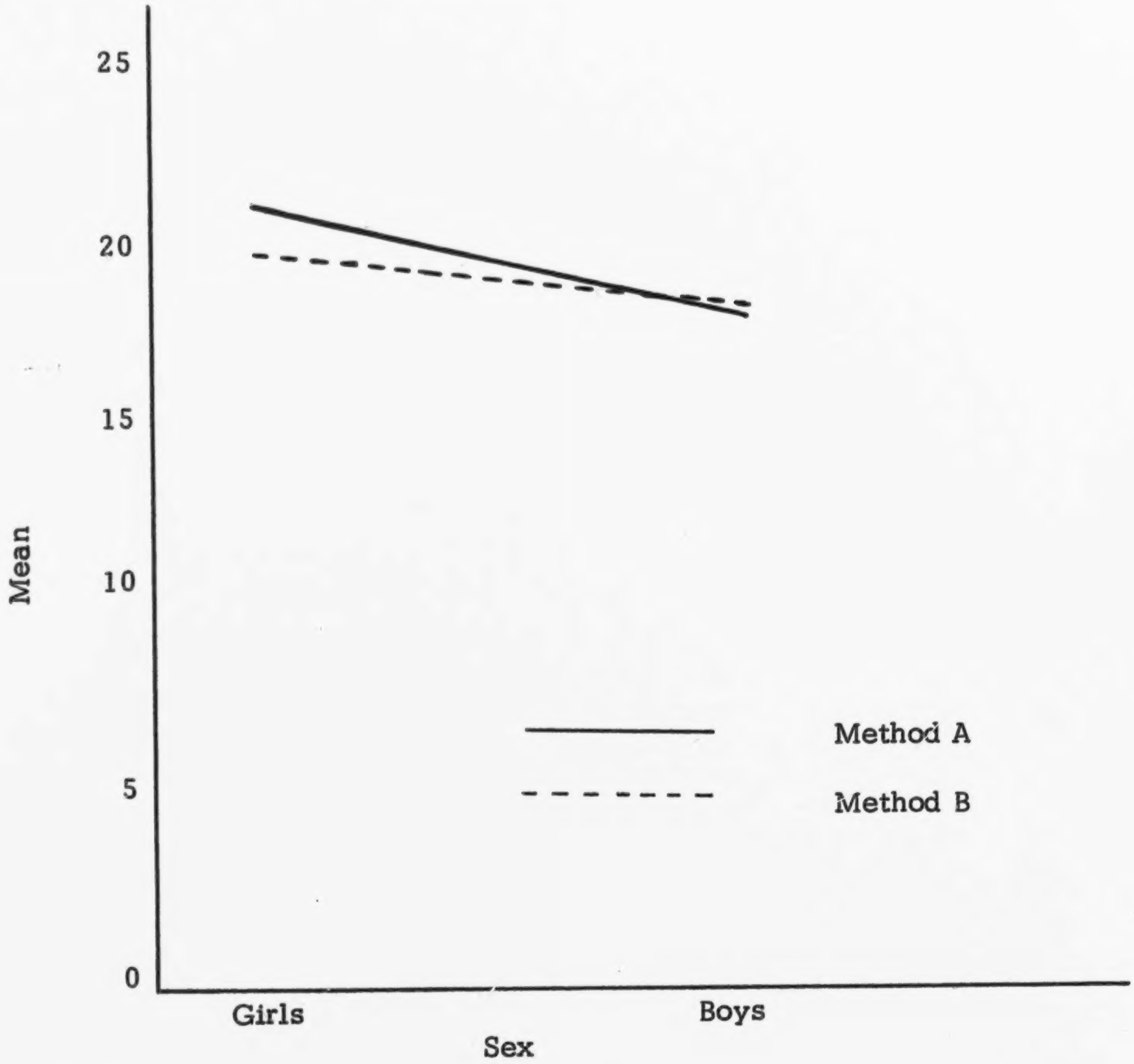


Figure 14 -- Interaction of Method x Sex

(Variable: Pupil Reading Attitude - San Diego Pupil Attitude Inventory)

Methods	Girls	Boys
A	26.08	21.77
B	23.90	23.85

Variable Means

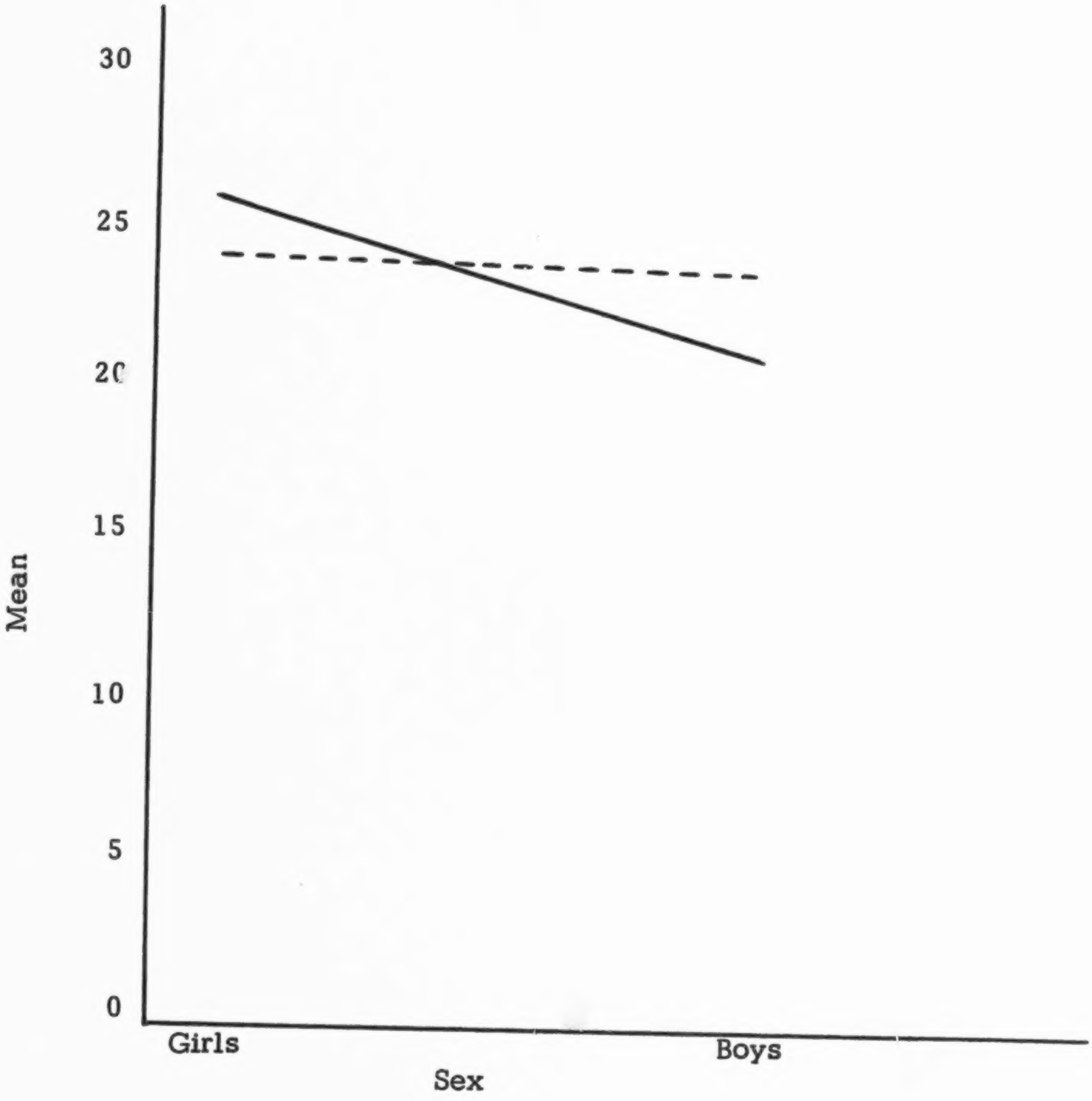


Figure 15 -- Interaction of Method x Sex

(Variable: Spelling - Stanford Achievement Tests)

Methods	Girls	Boys
A	26.08	21.77
B	23.90	23.85

Variable Means

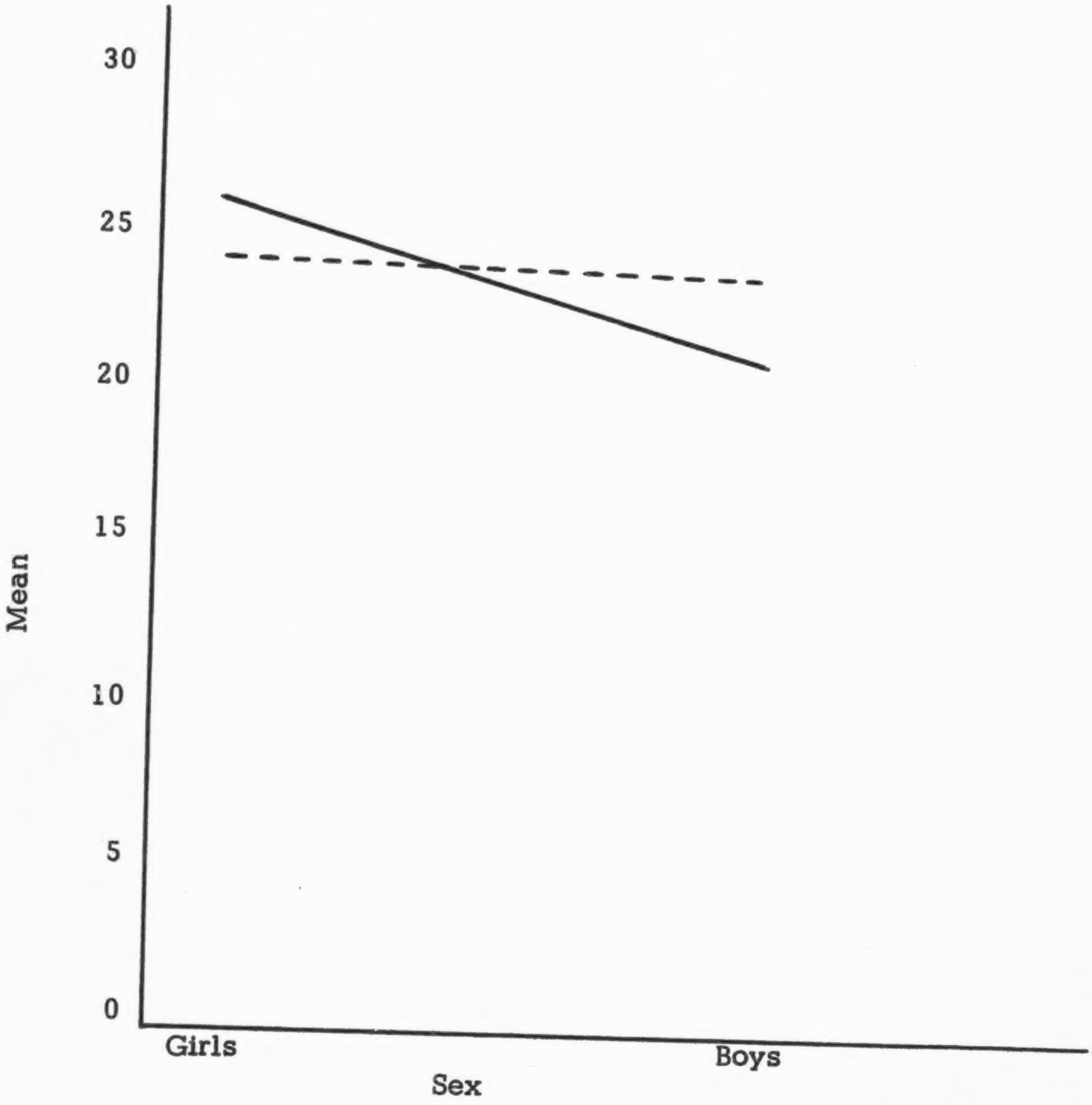


Figure 15 -- Interaction of Method x Sex

(Variable: Spelling - Stanford Achievement Tests)

TABLE 42

SUMMARY OF THE UNIVARIATE ANALYSIS OF VARIANCE FOR TESTING THE SIGNIFICANCE OF THE INTERACTION BETWEEN SOCIO-ECONOMIC LEVEL AND SEX ON FINAL ACHIEVEMENT IN GRADE THREE

Final Variables	(1)	(2)	(3)	F
1. Pupil Reading Attitude (San Diego)	18.45	20.27	18.58	4.18**
Stanford Achievement Tests				
2. Word meaning	27.27	26.78	26.11	.98
3. Paragraph Meaning	45.10	42.99	46.23	2.62
4. Science & Social Studies Concepts	25.11	24.85	24.05	.74
5. Spelling	23.72	23.50	24.34	.12
6. Word Study Skills	46.21	44.60	45.27	.41
7. Language	53.98	51.02	53.04	1.76
8. Arithmetic Computation	40.23	39.88	41.81	.55
University of Pittsburgh Diagnostic Rating of Language Outcomes				
9. Understandings	20.71	19.96	20.93	.39
10. Habits	21.41	20.16	21.28	.98
11. Skills	28.28	26.39	27.58	1.06
12. Personal Responses	21.89	21.20	21.77	.26
13. Listening Comp.	21.76	20.14	21.50	.36

df for Socio-economic Levels x Sex = 2
df for Error = 154

*Statistically significant at .01
**Statistically significant at .05

	Socio-economic Levels		
	I.	II.	III.
Girls	20.25	20.93	19.92
Boys	19.03	17.86	18.43

Variable Means

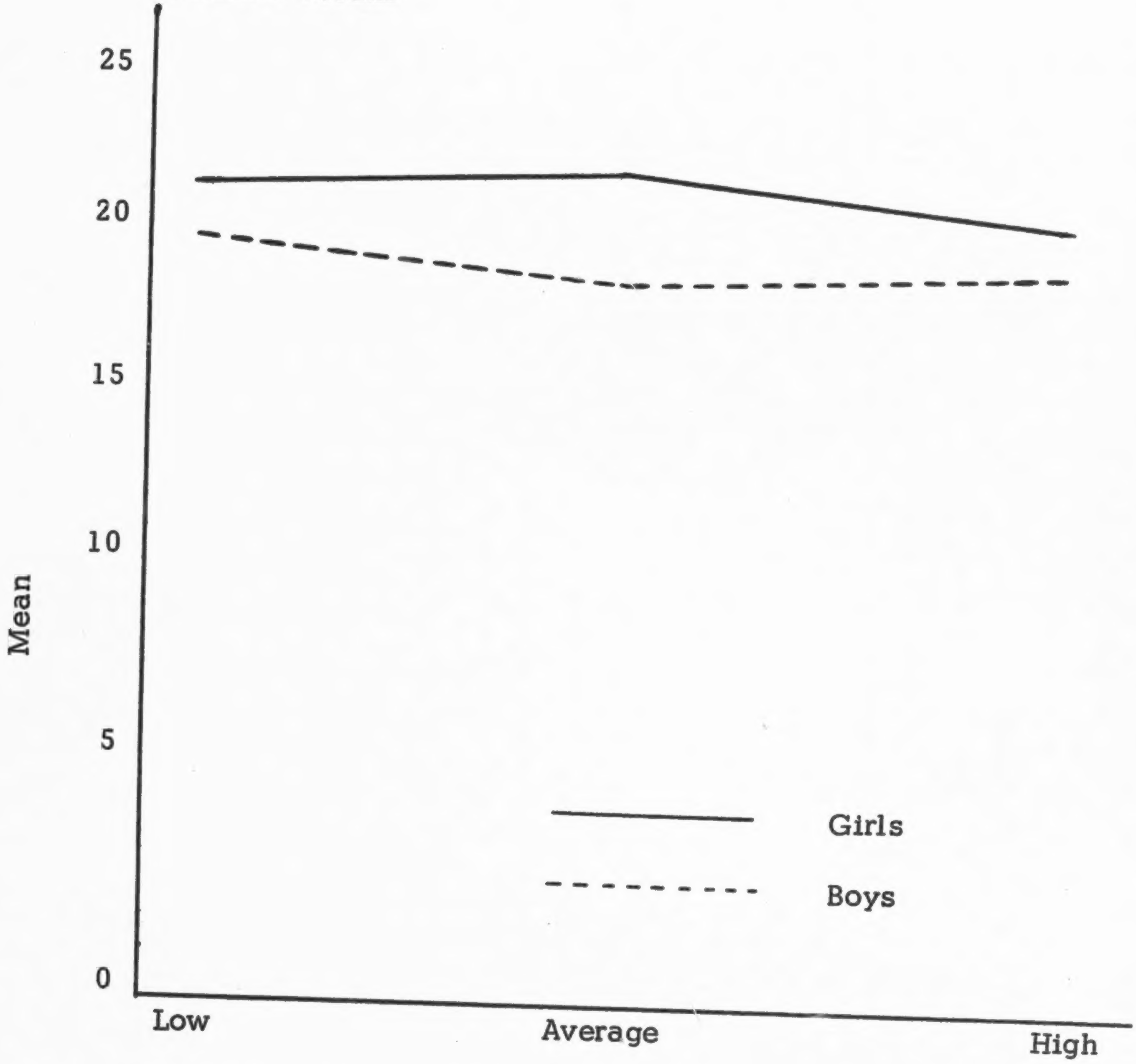


Figure 16 -- Interaction of Socio-economic Levels x Sex

(Variable: Pupil Reading Attitude - San Diego Pupil Attitude Inventory)

TABLE 43

SUMMARY OF DECISIONS ON TESTS OF MAIN EFFECTS AND INTERACTION HYOTHESES FOR CRITERION VARIABLES AT .01 AND .05 LEVELS, PROBLEM ONE, GRADE THREE

Final Variables	Meth.	S.E.L.	Sex	Meth. x Sex	Meth. x S.E.L.	Meth. x Sex	S.E.L. x Sex
1. Pupil Reading Attitude (San Diego)			*			**	**
Stanford Achievement Tests							
2. Word Meaning		*					
3. Paragraph Meaning		*					
4. Science and Social Studies Concepts		*	*			**	
5. Spelling		*					
6. Word Study Skills		*					
7. Language		*					
8. Arithmetic Computation		*					
University of Pittsburgh Diagnostic Rating of Language Outcomes							
9. Understandings		*					
10. Habits		*			**		
11. Skills		*			**		
12. Personal Responses		*					
13. Listening Comp.		*					

*Accept the null hypothesis at .01 level

**Accept the null hypothesis at .05 level

TABLE 44

MEANS FOR EACH EXPERIMENTAL GROUP ON PUPIL READING ATTITUDE, WORD MEANING, AND PARAGRAPH MEANING (GRADE THREE)

Methods	Socio-economic Levels		
	I.	II.	III.
A.	1. a. 21.13 b. 30.56 c. 51.88 a. 18.69 b. 30.13 c. 50.81 2.	1. a. 21.12 b. 25.94 c. 43.25 a. 15.12 b. 25.63 c. 45.13 2.	1. a. 21.67 b. 23.67 c. 40.89 a. 17.75 b. 21.75 c. 34.00 2.
B.	1. a. 19.37 b. 30.38 c. 51.50 a. 19.37 b. 28.69 c. 47.69 2.	1. a. 20.75 b. 28.00 c. 44.63 a. 17.00 b. 28.13 c. 46.31 2.	1. a. 18.17 b. 21.92 c. 41.83 a. 19.11 b. 26.33 c. 39.33 2.

Key:

Method A = Integrated Experience Approach, Method B = Coordinated Basal Language Arts Approach

Socio-economic Level I = High, Socio-economic Level II = Middle, Socio-economic Level III = Low

1. = Girls, 2. = Boys

a. = Pupil Reading Attitude (San Diego Pupil Attitude Inventory)
b. = Word Meaning (Stanford Achievement Tests)
c. = Paragraph Meaning (Stanford Achievement Tests)

TABLE 45

MEANS FOR EACH EXPERIMENTAL GROUP ON SCIENCE AND SOCIAL STUDIES CONCEPTS, SPELLING, AND WORD STUDY SKILLS (GRADE THREE)

Methods	Socio-economic Levels		
	I.	II.	III.
A.	1. a. 26.88 b. 26.25 c. 52.94	1. a. 23.56 b. 25.31 c. 42.63	1. a. 19.78 b. 26.68 c. 37.22
	a. 30.13 b. 24.69 c. 54.44 2.	a. 27.85 b. 21.63 c. 45.13 2.	a. 22.38 b. 19.00 c. 31.63 2.
B.	1. a. 26.00 b. 27.00 c. 54.31	1. a. 24.00 b. 23.44 c. 46.56	1. a. 18.00 b. 20.57 c. 37.50
	a. 27.50 b. 24.94 c. 50.06 2.	a. 25.50 b. 24.38 c. 47.75 2.	a. 24.78 b. 22.22 c. 44.11 2.

(Stanford Achievement Tests)

Key:

Method A = Integrated Experience Approach, Method B = Coordinated Basal Language Arts Approach

Socio-economic Level I = High, Socio-economic Level II = Middle, Socio-economic Level III = Low

1. = Girls, 2. = Boys

a. = Science and Social Studies Concepts
b. = Spelling
c. = Word Study

TABLE 46

MEANS FOR EACH EXPERIMENTAL GROUP ON LANGUAGE, ARITHMETIC COMPUTATION, AND LANGUAGE UNDERSTANDINGS (GRADE THREE)

Methods	Socio-economic Levels		
	I.	II.	III.
A.	1. a. 64.06 b. 47.50 c. 24.25 a. 61.06 b. 49.75 c. 22.94 2.	1. a. 50.75 b. 37.19 c. 20.06 a. 52.56 b. 38.12 c. 22.44 2.	1. a. 47.67 b. 38.44 c. 19.89 a. 42.50 b. 32.13 c. 14.63 2.
B.	1. a. 62.06 b. 45.06 c. 24.25 a. 56.00 b. 44.81 c. 21.00 2.	1. a. 52.19 b. 38.81 c. 21.75 a. 53.13 b. 41.25 c. 21.81 2.	1. a. 45.17 b. 36.33 c. 16.75 a. 45.00 b. 38.33 c. 16.56 2.

Key:

Method A = Integrated Experience Approach, Method B = Coordinated Basal Language Arts Approach

Socio-economic Level I = High, Socio-economic Level II = Middle, Socio-economic Level III = Low

1. = Girls, 2. = Boys

a. = Language (Stanford Achievement Tests)
b. = Arithmetic Computation (Stanford Achievement Tests)
c. = Language Understandings (University of Pittsburgh Diagnostic Rating of Language Outcomes, 1967)

TABLE 47

MEANS FOR EACH EXPERIMENTAL GROUP ON LANGUAGE HABITS, SKILLS, PERSONAL RESPONSES, AND LISTENING (GRADE THREE)

Methods	Socio-economic Levels		
	I.	II.	III.
A.	1. a. 24.19 b. 32.94 c. 25.63 d. 22.94 a. 23.31 b. 31.38 c. 24.94 d. 23.19 2.	1. a. 21.56 b. 27.81 c. 22.37 d. 21.69 a. 20.87 b. 28.00 c. 22.13 d. 22.00 2.	1. a. 21.44 b. 27.67 c. 19.56 d. 21.89 a. 16.88 b. 23.38 c. 17.00 d. 21.13 2.
B.	1. a. 24.75 b. 33.00 c. 25.69 d. 23.25 a. 20.31 b. 28.31 c. 22.38 d. 22.75 2.	1. a. 23.06 b. 28.81 c. 23.50 d. 21.94 a. 23.44 b. 29.94 c. 23.00 d. 21.31 2.	1. a. 15.92 b. 18.50 c. 16.58 d. 18.53 a. 15.67 b. 19.33 c. 16.11 d. 20.89 2.

Key: (University of Pittsburgh Diagnostic Rating of Language Outcomes, 1967)

Method A = Integrated Experience Approach, Method B = Coordinated Basal Language Arts Approach

Socio-economic Level I = High, Socio-economic Level II = Middle, Socio-economic Level III = Low

1. = Girls, 2. = Boys

a. = Habits
b. = Skills
c. = Personal Responses
d. = Listening (Informally Devised, University of Pittsburgh, 1967)

TABLE 48

SUMMARY OF THE MULTIVARIATE ANALYSIS OF VARIANCE FOR TESTING THE SIGNIFICANCE OF DIFFERENCE BETWEEN THIRD GRADERS IN TWO METHODS ON FINAL ACHIEVEMENT DATA

Final Variables	Means		S.D.		Multivariate
	Method A	Method B	Method A	Method B	F
Minnesota Tests of Creative Thinking					
Task 2: Figure Completion					
14. Fluency	10.84	9.57	5.96	4.07)	
15. Flexibility	6.74	6.29	3.88	2.70)	
16. Originality	2.72	2.53	2.25	1.77)	
17. Elaboration	5.00	6.64	2.90	3.68)	
18. Fluency	9.70	7.41	4.95	5.23)	
Task 3: Product Improvement					
19. Flexibility	5.25	4.24	2.45	1.93)	
20. Originality	7.26	4.86	5.29	3.90)	
21. Elaboration	5.81	4.78	4.01	1.77)	1.92**
22. Accuracy	47.11	51.32	15.66	19.24)	
Gilmore Oral Reading					
23. Rate	115.56	116.81	22.37	26.73)	
24. Comprehension	49.02	46.41	18.09	14.38)	

TABLE 48 (Continued)

Final Variables	Means Method A	Means Method B	S.D. Method A	S.D. Method B	Multivariate F
Creative Writing Measure					
25. Running Words	91.56	99.00	45.40	47.50)	
26. No. of different words	52.63	50.41	22.21	17.51)	
27. No. of words spelled correctly	87.35	94.92	44.54	47.17)	
28. No. of Polysyllabic words	1.86	1.81	2.38	2.56)	
29. Mechanics Ratio	85.39	82.05	14.30	16.45)	

Method A = Integrated Experience Approach to Communication
Method B = Coordinated Basal Language Arts Approach

Number of pupils in Method A = 57
Number of pupils in Method B = 59 (Subsample)

*Statistically significant at .01
**Statistically significant at .05

Problem Two: Analyses of the Effects of Methods, Mental Age Levels, and Sex on Pupil Achievement in Grade Three

The main effect and interaction hypotheses in Problem Two are considered in view of seven criterion variables involving the total pupil population, sampled for proportionality in analyses. Sample size per cell, per effect reflects a population stratification in raw score thirds on the Pintner-Cunningham Test of Mental Ability (administered in Grade One).

Since the pupil population for Problems One and Two are representative samples the effects of Method, Sex, and Method x Sex found in Problem One will not be repeated in Problem Two. Only the main effects of Mental Age, Method x Mental Age x Sex, Method x Mental Age, and Mental Age x Sex are reviewed here.

The effects of Mental Age Levels on pupil achievement in seven criterion variables are listed in Table 49. As shown, statistically significant differences at .01 level are noted in word meaning, paragraph meaning, word study skills, language, and arithmetic concepts. An examination of mean scores reveal that pupils at Mental Age Level I had consistently higher mean scores than pupils at Mental Age Level 2 and 3. Pupils in Mental Age Level 2 had higher mean scores than those in Mental Age Level 3, except on variable 6 where the reverse is noted.

The second order and first order interaction hypotheses of Method x Mental Age Levels x Sex; Method x Mental Age Levels; and Mental Age Levels x Sex are summarized in Tables 50, 51, 52, and 53. An inspection of Table 50 reveals that, at the .05 level, there is a statistically significan interaction between Method x Mental Age Levels x Sex on pupil achievement in spelling. Figure 17 is a graphic presentation of this interaction. It generally reflects nonparallelity exists with two exceptions. Some parallelity is evident between the girls in Method A and the boys in Method B and between the girls in Method B and the boys in Method A from low to average mental age levels.

Table 51, which summarizes tests of significance of the interaction between Method x Mental Age Level, also shows a statistically significant interaction at .05 level on spelling, and word study skills. Figures 18 and 19 are graphic representations of these interactions. One can note that nonparallelity exists.

TABLE 49

SUMMARY OF THE UNIVARIATE ANALYSIS OF VARIANCE FOR TESTING THE SIGNIFICANCE OF DIFFERENCE BETWEEN THIRD GRADE PUPILS WITHIN THREE MENTAL AGE LEVELS ON FINAL ACHIEVEMENT DATA

Final Variables	Grand Mean M.A.L. 1	M.A.L. 2	M.A.L. 3	F
1. Pupil Reading Attitude (San Diego)	19.37	20.33	18.50	1.05
Stanford Achievement Tests				
2. Word meaning	30.53	27.09	25.75	10.06*
3. Paragraph Meaning	50.28	45.50	41.95	10.95*
4. Spelling	24.55	24.66	22.55	1.20
5. Word Study Skills	52.10	45.47	44.72	6.29*
6. Language	58.60	50.54	51.50	6.34*
7. Arithmetic Concepts	37.43	33.71	32.00	5.84*

Number of pupils in M.A.L. 1 = 24
Number of pupils in M.A.L. 2 = 24
Number of pupils in M.A.L. 3 = 22

(Sampled down for proportionality)

M.A.L. 1 = upper mental age level
M.A.L. 2 = middle mental age level
M.A.L. 3 = low mental age level

df for Mental Age Level = 2
df for Error = 86

*Statistically significant at .01
**Statistically significant at .05

TABLE 50

SUMMARY OF THE UNIVARIATE ANALYSIS OF VARIANCE FOR TESTING THE SIGNIFICANCE OF THE INTERACTION BETWEEN METHOD, MENTAL AGE, AND SEX ON FINAL ACHIEVEMENT DATA IN THIRD GRADE

Final Variables	Means of Interaction Terms (1)	(2)	(3)	F
1. Pupil Reading Attitude (San Diego)	18.94	20.21	19.05	.95
Stanford Achievement Tests				
2. Word Meaning	27.30	27.28	28.79	.68
3. Paragraph Meaning	44.98	45.55	47.20	.47
4. Spelling	20.35	24.35	26.06	4.30**
5. Word Study Skills	44.18	46.91	51.20	2.88
6. Language	52.83	51.63	56.19	1.16
7. Arithmetic Concepts	33.42	33.14	32.18	1.45

Number of pupils = 70 (Sampled for proportionality)

df for Method x Mental Age x Sex = 2
df for Error = 86

*Statistically significant at .01
**Statistically significant at .05

	High		Average		Low	
Method	Girls	Boys	Girls	Boys	Girls	Boys
A	25.90	27.10	28.90	19.75	22.90	18.10
B	25.50	24.70	23.67	27.25	24.50	19.70

Variable Means

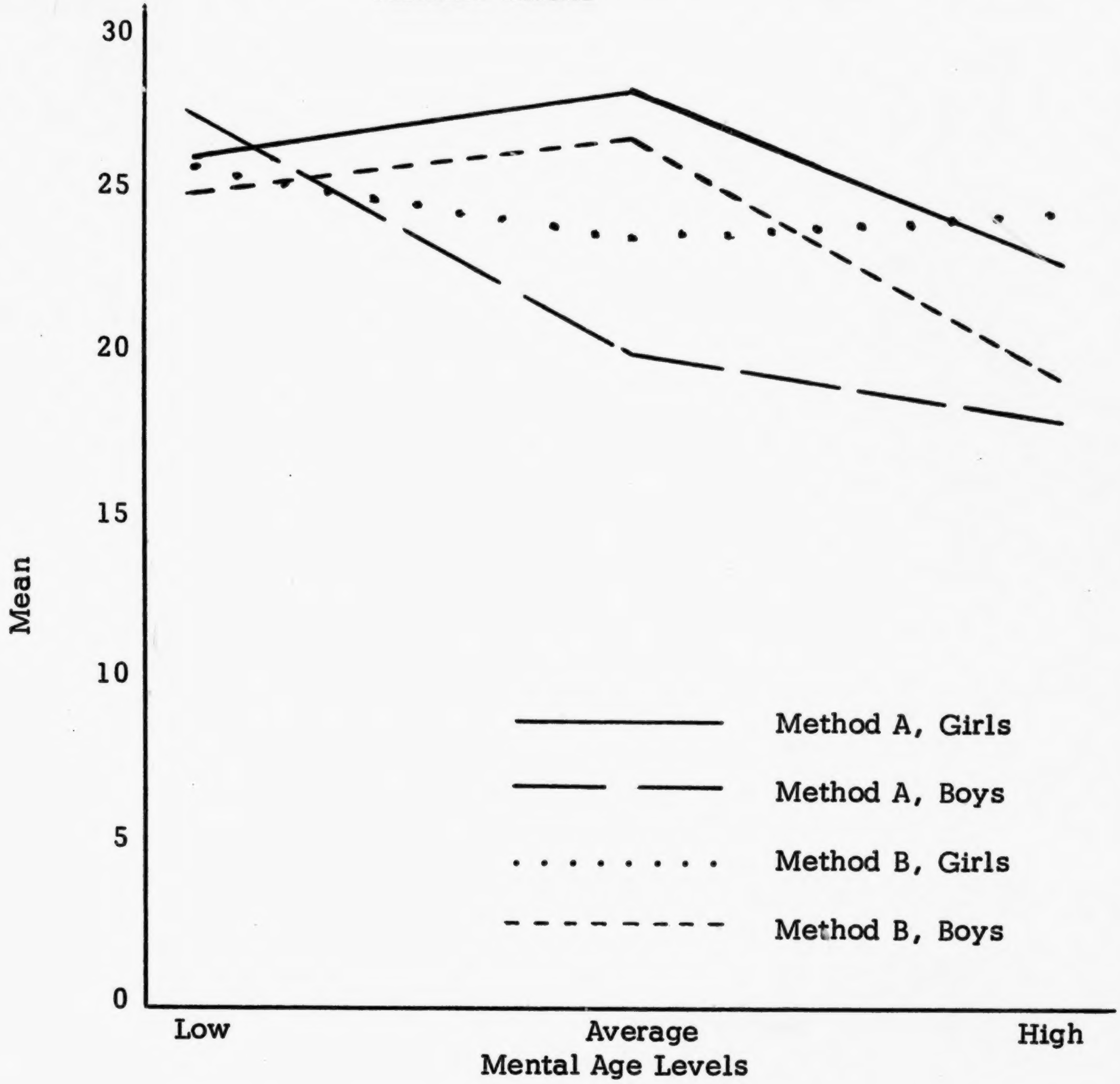


Figure 17 -- Interaction of Method x Mental Age x Sex

(Variable: Spelling, Stanford Achievement Tests)

TABLE 51

SUMMARY OF THE UNIVARIATE ANALYSIS OF VARIANCE FOR TESTING THE SIGNIFICANCE OF INTERACTION BETWEEN METHOD AND MENTAL AGE LEVELS ON FINAL ACHIEVEMENT DATA IN IN GRADE THREE

Final Variables	Means of Interaction Terms (1)	(2)	(3)	F
1. Pupil Reading Attitude (San Diego)	18.98	18.96	20.27	.60
Stanford Achievement Tests				
2. Word Meaning	28.18	27.31	27.88	.34
3. Paragraph Meaning	46.82	44.94	45.97	.56
4. Spelling	26.17	22.17	23.43	4.25**
5. Word Study Skills	49.38	44.06	48.84	3.14**
6. Language	54.64	51.90	54.11	.78
7. Arithmetic Concepts	34.50	33.27	35.36	.67

Number of pupils = 70

df for Method x Mental Age Levels = 2
df for Error = 86

*Statistically significant at .01
**Statistically significant at .05

Mental Age Levels			
Methods	Low	Middle	High
A	20.50	24.33	26.50
B	22.10	25.46	25.10

Variable Means

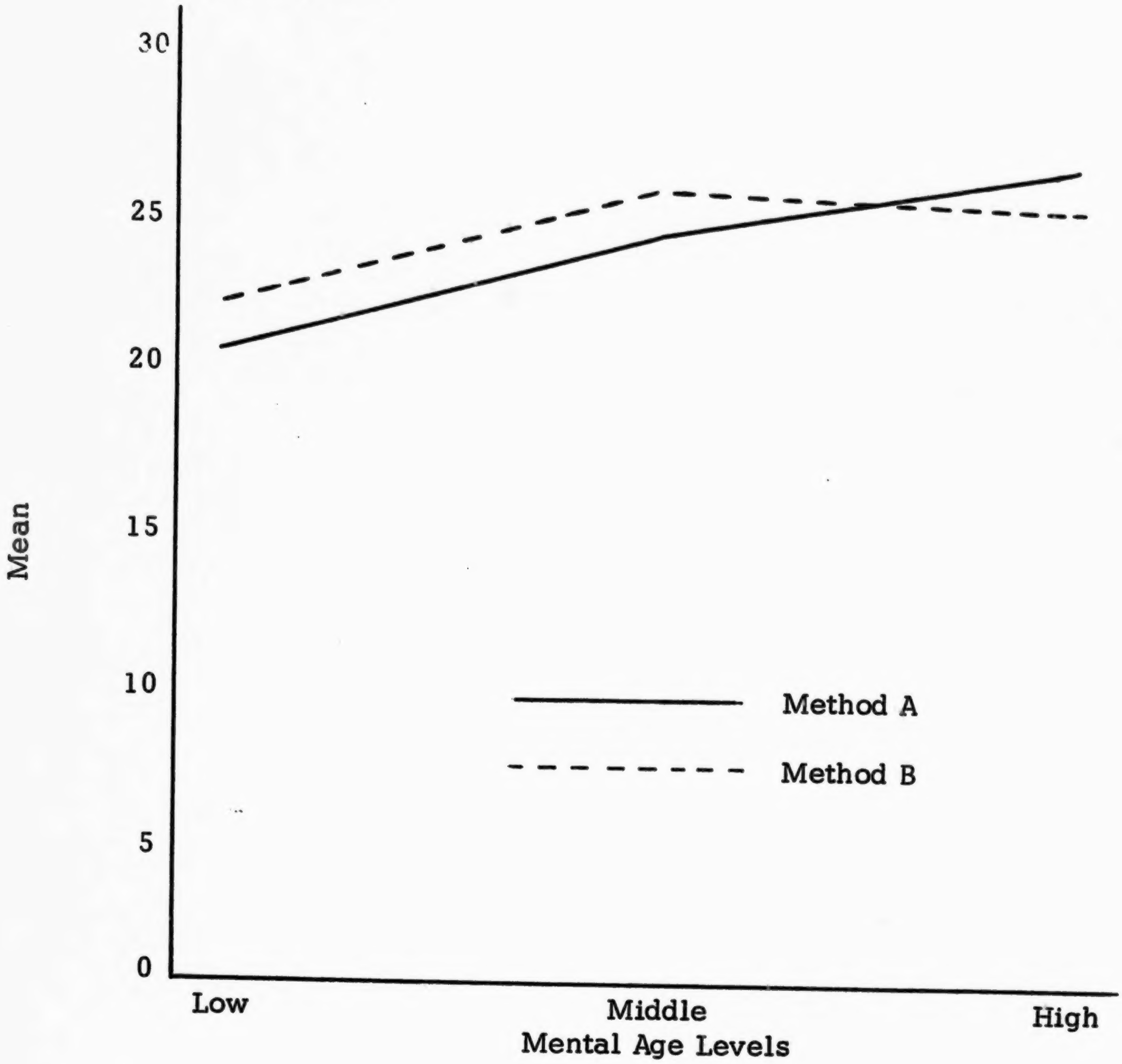


Figure 18 -- Interaction of Method x Mental Age Levels

(Variable: Spelling - Stanford Achievement Tests)

	Mental Age Levels		
Method	Low	Middle	High
A	46.00	40.45	53.15
B	49.95	49.00	49.55

Variable Mean

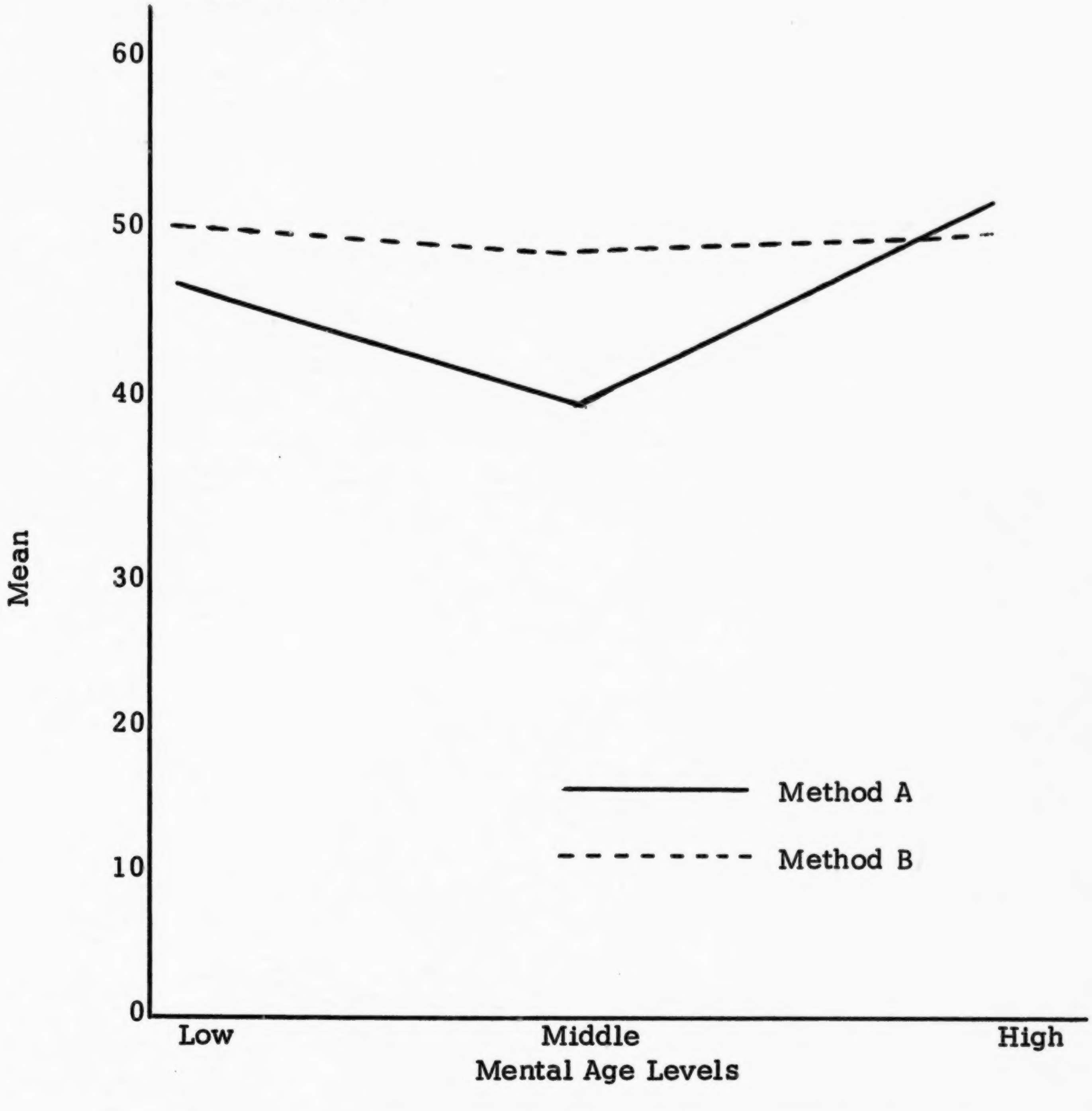


Figure 19 -- Interaction of Method x Mental Age Levels

(Variable: Word Study Skills - Stanford Achievement Tests)

As shown in Table 52 there are no statistically significant interactions between Mental Age Levels x Sex on the criterion variables listed. Table 53 is included as a summary of all decisions on tests of main effects and interaction hypotheses.

In order to examine variable means per experimental treatment more specifically, Tables 54 and 55 are provided. These generally reflect much, per stratification cell, variability between the methods and between the sexes in Method A as compared to Method B. One can note pupils in the lowest mental age classification generally better mean scores when taught through the Coordinated Basal Language Arts Approach.

TABLE 52

SUMMARY OF THE UNIVARIATE ANALYSIS OF VARIANCE FOR TESTING THE SIGNIFICANCE OF THE INTERACTION BETWEEN MENTAL AGE LEVELS AND SEX ON FINAL ACHIEVEMENT DATA IN THIRD GRADE

Final Variables	(1)	(2)	(3)	F
1. Pupil Reading Attitude (San Diego)	19.26	18.69	20.25	.64
Stanford Achievement Tests				
2. Word Meaning	28.45	27.32	27.60	.59
3. Paragraph Meaning	46.65	46.08	45.00	.34
4. Spelling	23.91	23.91	23.93	.008
5. Word Study Skills	49.35	49.32	43.62	2.77
6. Language	54.82	53.77	52.06	.54
7. Arithmetic Concepts	35.94	34.87	32.33	1.85

Number of pupils = 70

df for Sex x Mental Age = 2
df for Error = 86

*Statistically significant at .01
**Statistically significant at .05

TABLE 53

SUMMARY OF DECISIONS ON TESTS OF MAIN EFFECTS AND INTERACTION HYPOTHESES FOR CRITERION VARIABLES, PROBLEM TWO, GRADE THREE

Final Variables	Meth.	Mental Age Levels	Sex	M.A.L. x sex x Meth.	M.A.L. x Meth.	Sex x M.A.L.
1. Pupil Reading Attitude (San Diego)						
Stanford Achievement Tests						
2. Word Meaning		*				
3. Paragraph Meaning		*				
4. Spelling				**	**	
5. Word Study Skills		*			**	
6. Language		*				
7. Arithmetic Concepts		*				

*Accept the null hypotheses at .01
**Accept the null hypotheses at .05

TABLE 54

MEANS FOR EACH EXPERIMENTAL GROUP ON PUPIL READING ATTITUDE, WORD MEANING, AND PARAGRAPH MEANING (GRADE THREE)

Methods	Mental Age Levels		
	I.	II.	III.
A.	1. a. 20.90 b. 31.10 c. 52.30 a. 18.10 b. 30.40 c. 50.20 2.	1. a. 24.25 b. 28.00 c. 47.25 a. 19.25 b. 26.00 c. 44.00 2.	1. a. 20.70 b. 24.30 c. 42.10 a. 16.50 b. 25.90 c. 40.00 2.
B.	1. a. 19.80 b. 30.30 c. 50.30 a. 18.70 b. 30.30 c. 48.30 2.	1. a. 20.33 b. 24.83 c. 42.50 a. 17.50 b. 29.50 c. 48.25 2.	1. a. 17.10 b. 25.30 c. 42.70 a. 19.70 b. 27.50 c. 43.00 2.

Key:

Method A = Integrated Experience Approach, Method B = Coordinated Basal Language Arts Approach

Mental Age Level 1 = High, Mental Age Level 2 = Mental Age Level 3 = Low

1. = Girls, 2. = Boys

a. = Pupil Reading Attitude (San Diego Pupil Attitude Inventory
b. = Word Meaning (Stanford Achievement Tests)
c. = Paragraph Meaning (Stanford Achievement Tests)

TABLE 55

MEANS FOR EACH EXPERIMENTAL GROUP ON SPELLING, WORD STUDY SKILLS, LANGUAGE, AND ARITHMETIC CONCEPTS (GRADE THREE)

Methods	Mental Age Levels		
	I.	II.	III.
A.	1. a. 25.90 b. 50.60 c. 60.50 d. 38.30 a. 27.10 b. 55.70 c. 59.20 d. 37.90 2.	1. a. 28.00 b. 44.75 c. 52.50 d. 35.00 a. 19.75 b. 47.25 c. 50.00 d. 35.00 2.	1. a. 22.90 b. 40.60 c. 48.40 d. 30.30 a. 18.10 b. 40.30 c. 51.60 d. 32.60 2.
B.	1. a. 25.50 b. 53.50 c. 59.30 d. 37.20 a. 24.70 b. 48.60 c. 55.40 d. 36.30 2.	1. a. 23.67 b. 34.66 c. 45.60 d. 25.83 a. 27.25 b. 55.25 c. 54.00 d. 38.50 2.	1. a. 24.50 b. 48.70 c. 55.10 d. 32.00 a. 19.70 b. 49.30 c. 50.90 d. 32.00 2.

(Stanford Achievement Tests)

Key:

Method A = Integrated Experience Approach, Method B = Coordinated Basal Language Arts Approach

Mental Age Level 1 = High, Mental Age Level 2 = Middle, Mental Age Level 3 = Low

1. = Girls, 2. = Boys

a. = Spelling, b = Word Study Skills, c = Language, d = Arithmetic Concepts

IV. CONCLUSIONS AND RECOMMENDATIONS

A. Conclusions

One may reasonably conclude from this continued investigation of the outcomes of language arts instruction, that it is the effects of socio-economic levels, mental age levels, and sex differences that are more lasting than the effects of method. Though statistically significant differences between pupils were apparent the first two years of this study, by the third year no significant differences in achievement between pupils in an Integrated Experience Approach and a Coordinated Basal Language Arts Approach could be isolated except on measures of creative thinking, oral reading and creative writing. Consistently, though, for each of the three years of the research investigation differences were obvious between pupils at three distinct mental age levels, three socio-economic levels, and between boys and girls regardless of method.

Any attempt to explain why early differences between the pupils within each method did not persist for three years would be inappropriate and based on speculation rather than scientific analyses. As cited earlier in this report, several variables over which the investigators had no control confounded the scientific accuracy of results at the close of the second and third years. Included were pupil attrition, inability of the investigators to control instructional method of the pupils who subsequently joined Integrated Experience Approach classes in second and third grades, and the unevenly distributed implementation of team teaching procedures.

Obvious at the end of the second year of the study is the fact that pupils in an Integrated Experience Approach, that encouraged wide individualized reading of trade books, had significantly higher achievement in science and social studies concepts. We may conclude that such teaching-learning procedures do encourage an easy application of reading techniques in content subject areas. Related, too, is the fact that these pupils who self-selected wide varieties for their reading diet exhibited significantly more maturity in their choice of books and were more positive in their attitudes toward reading. From the findings we can further conclude the Integrated Experience Approach to Communication fostered more language practice and applications thereby resulting in significantly higher achievements for pupils taught with this method.

From the findings of this investigation we can reasonably see that pupils in upper mental age levels and upper socio-economic levels will have significantly higher levels of related language achievements than pupils at average and low levels. Pupils at average socio-economic levels and mental age levels can generally be expected to demonstrate better language achievements than pupils at low levels. Through the first three grades, too, girls will be significantly superior in language achievements to boys.

Perhaps more important than methods or approaches are the degrees to which teachers can individualize instruction within any structural or philosophic framework. It was so obvious, so often that the inadequate teacher regardless of method and supervisory help is generally so disoriented to her own personal environment that she fails to identify an individual pupil's needs nor can she even begin to cope with these if identified for her by a supervisor. Equally obvious, though, was the observation that good teaching becomes superior teaching if the method lends to a teacher's flexibility and ingenuity in its implementation.

There is no doubt that the commentaries of teachers support the fact that a destructive, insensitive, or indifferent supervisor made the teacher feel insecure and less competent in an instructional method being employed for the first time. Therefore, we may conclude that a supervisor's encouragements and constructive help reap far more positive results than destructive criticisms and negativism. Furthermore, teacher's attitudes continue to become more positive toward instructional innovation as teachers observe and test pupil achievements.

From the continuation of this study one may also conclude that the costs per method remained comparable. And, though smaller class unit size is desirable, class enrollments of 35-40 did not preclude the management of individualized instruction by a skilled teacher in either instructional approach.

Finally, teachers need and want guides to instructional procedures and management for language arts teaching and learning. Such guides provide security and a broad framework within which much flexibility can occur. Guides may be available commercially or may be prepared to reflect the philosophies operational within the school district.

B. Recommendations

The following recommendations are generally suggested:

1. Continued investigations of the effects of methods on pupil achievements should be directed toward each child's individualized language attainment as well as class or group language achievements.

2. More scientific investigations should be initiated in attempting to determine the degree to which interrelated language learning does exist or occur within a specified type of instructional approach.

3. More attention should be given to the refinement of standardized survey and diagnostic tests of language learning outcomes for elementary pupils taught through varied approaches.

4. Teachers should be given concentrated instruction in the use of evaluative instruments, their values, in individualized instruction, and their limitations.

5. Teachers should be given adequate inservice help while getting acquainted with new instructional innovations, and materials.

6. Emotional responses to the novelty of an instructional approach must be replaced with scientific conclusions.

7. Before selecting or applying research results, teachers and administrators should carefully consider their situation and the applicability of findings presented by researchers.

8. Regardless of method, educators must determine reasonable and appropriate instructional goals for pupils in the language arts.

9. School systems undertaking a new approach should clearly define it, understand the philosophical construct from which it is generated, and then plan a structural framework for its organized rather than accidental implementation.

Learning and teaching the processes of communication should allow for ease, freedom, flexibility, and an assurance of successes.

REFERENCES

References

1. Bond, Guy and Dykstra, Robert. "Coordinating Center for First-Grade Reading Instruction Programs," Final Report Project No. X-001, (February, 1967), U.S. Department of Health, Education, and Welfare.

2. Hahn, Harry. "A Study of the Relative Effectiveness of Three Methods of Teaching Reading in Grade One", Cooperative Research Project No. 2687, (1965), U.S. Department of Health, Education, and Welfare.

3. Hahn, Harry. "Three Approaches to Beginning Reading Instruction: I.T.A., Language Experience, and Basic Readers; Extended to Second Grade," Reading Teacher, 20 (May 1967), pp. 687-755.

4. Harris, Albert and Serwer, Blanche. "Comparison of Reading Approaches in First-Grade Teaching With Disadvantaged Children", Cooperative Research Project No. 2677, (1966), U.S. Department of Health, Education, and Welfare.

5. Harris, A. J., Serwer, B., and Gold, A. "Comparing Reading Approaches in First Grade Teaching With Disadvantaged Children, Extended Into Second Grade: Skills Centered and Language Experience Approaches," Reading Teacher, 20 (May 1967), pp. 687-755.

6. Hildreth, Gertrude. "Experience Related Reading for School Beginners", Elementary English, 42 (March, 1965), pp. 280-97.

7. Kendrick, William. "A Comparative Study of Two First Grade Language Arts Programs." Cooperative Research Project No. 2576, (1966), U.S. Department of Health, Education, and Welfare.

8. Kendrick, William and Bennett, C.L. "A Comparative Study of Two First Grade Language Arts Programs, Extended Into Second Grade," Reading Teacher, 20 (May 1967), pp. 687-755.

9. McCanne, Roy. "A Study of Approaches to First Grade Reading Instruction for Children From Spanish-Speaking Homes", Cooperative Research Project No. 2734, (1966), U.S. Department of Health, Education, and Welfare.

10. Millay, Edna St. Vincent. "Renascence", (in Untermeyer, Louis). Modern American Poetry, Modern British Poetry, New York: Harcourt, Brace and World, (1962), 442.

11. Sister M. Marita. "A Comparative Study of Beginning Reading Achievement Under Three Classroom Organizational Patterns: Modified Individualized, Three-to-Five Groups, and Whole Class Language Experience," Cooperative Research Project No. 2659, (1965), U.S. Department of Health, Education, and Welfare.

12. Stauffer, Russell and Hammond, Dorsey. "Effectiveness of A Language Arts and Basic Reader Approach to First Grade Reading Instruction", Cooperative Research Project No. 2679, (1965), U. S. Department of Health, Education, and Welfare.

13. Stauffer, Russell and Hammond, Dorsey. "Effectiveness of Language Arts and Basic Reader Approaches to First Grade Reading Instruction: Extended Into Second Grade," Reading Teacher, 20 (May 1967), pp. 687-755.

14. Vilscek, Elaine, and Cleland, Donald. "Comparison of the Basal and the Coordinated Language Experience Approaches in First Grade Reading Instruction", Cooperative Research Project No. 2729, (1966), U. S. Department of Health, Education, and Welfare.

APPENDIX A

SAMPLE CHART OF COMMON DESIRED LANGUAGE OUTCOMES FOR PRIMARY GRADERS

GENERAL EXPECTED INSTRUCTIONAL OUTCOMES FOR PRIMARY PUPILS

A. UNDERSTANDINGS

The Child knows that:

	PERCEIVING	LISTENING	SPEAKING	NON VERBAL SIGNALING	WRITING	READING
1. Perceptions can be more vivid if maximal sensory stimuli are recognized.	X	X		X		X
2. Gestures, facial expressions, and other physical movements can be means of communicating without words or can be means for more adequate interpretation of verbal communication.	X			X		
3. Ideas, concepts, desires, feelings, information, and experiences can be expressed through appropriate language.	X	X	X		X	X
4. Information and pleasure can be acquired or shared through verbal and non-verbal acts of communication.	X	X	X	X	X	X
5. Past, present, and future can be expressed and sensed.	X	X	X		X	X
6. Each literary form has a distinctive characteristic.	X	X	X	X	X	X
7. There are appropriate times and places for specific communication acts.	X	X	X	X	X	X
8. One's personal worth can be manifested, recognized, and enhanced with growth toward language maturity.	X	X	X	X	X	X
9. Arts and acts of communication grow and change in our mobile society.	X	X	X	X	X	X

	PERCEIVING	LISTENING	SPEAKING	NON VERBAL	SIGNALING	WRITING	READING
10. There are many levels of verbal and non-verbal communication, each appropriate to a specific occasion or situation.	X	X	X	X	X	X	X
11. Effective communication is the end product of adequate perception, reception, apprehension, reflection, and expression.	X	X	X	X	X	X	X
12. Verbal and non-verbal acts are employed to convey or represent real or contrived objects, people, events, situations, relationships, and interactions.	X	X	X	X	X	X	X
13. There is some ordering or sequencing within communication processes.	X	X	X	X	X	X	X
14. Communicative processes are stabilized by standards and guidelines of linguistic structure or demonstration.	X	X	X	X	X	X	X
15. Facility in one act of communication can re-inforce facility in other communication processes.	X	X	X	X	X	X	X
16. Effective self-evaluation generates further growth.	X	X	X	X	X	X	X

B. APPLICATIONS

The child manifests growth in:

	PERCEIVING	LISTENING	SPEAKING	NON VERBAL SIGNALING	WRITING	READING
1. The habit of and ability to evaluate personal performance in all aspects of communication acts.	X	X	X	X	X	X
2. The ability to effectively organize perceptual stimuli, generalize them, set concepts, and interpret them to others.	X	X	X	X	X	X
3. The timely employment of non-verbal signals when participating in an act of communication.		X	X	X		X
4. The ability to and habit of obtaining pleasure through a variety of language media.	X	X	X		X	X
5. The habit of employing courtesy in all communication acts.	X	X	X	X	X	X
6. The ability to use verbal and non-verbal communicative processes functionally.	X	X	X	X	X	X
7. The ability to recognize personal purposes for communicating.	X	X	X	X	X	X

	PERCEIVING	LISTENING	SPEAKING	NON VERBAL SIGNALING	WRITING	READING
8. The habit of pursuing tasks independently.	X	X	X		X	X
9. The ability to acquire and employ a diversified vocabulary.	X	X	X		X	X
10. The ability to adhere to standards of established linguistic structure.	X	X	X	X	X	X
11. The habit of perceiving , listening, speaking, reading, non-verbal signaling, or writing without overt or hidden personal bias.	X	X	X	X	X	X
12. The ability to use reference sources in substantiating perceptions, apprehension, reflection, and expression.	X	X	X	X	X	X
13. The ability to constructively participate in communication acts.	X	X	X	X	X	X
14. The ability to interpret the direct or implied.	X	X	X	X	X	X

C. PERSONAL RESPONSES

The child manifests:	PERCEIVING	LISTENING	SPEAKING	NON VERBAL SIGNALING	WRITING	READING
1. Growing respect for the contribution of others through communication.	X	X	X	X	X	X
2. A growing desire to participate effectively in functional communcative processes.	X	X	X	X	X	X
3. A desire to extend, expand, and enrich his personal life through the six language arts.	X	X	X	X	X	X
4. Enjoyment and appreciation of beauty in literature and life.	X	X	X	X	X	X
5. The desire to make worthwhile contributions.			X	X	X	
6. Flexibility, fluency, and originality in creative communication.	X	X	X	X	X	X
7. Increasing confidence and security in communication acts.	X	X	X	X	X	X
8. A continuing intensity of intellectual curiosity.	X	X	X	X	X	X

	PERCEIVING	LISTENING	SPEAKING	NON VERBAL SIGNALING	WRITING	READING
9. An appreciation for the source and modes of acquiring information.	X	X	X	X	X	X
10. Kind acceptance of the differences of others as manifested through communication.	X	X	X	X	X	X
11. Growing Appreciation of varied literary form.		X	X		X	X

MASTERY CHECKLIST OF SPECIFIC DESIRABLE INTEGRATED OUTCOMES WITHIN THE PRIMARY BLOCK

UNDERSTANDINGS

Perceptual-Conceptual Development

	PERCEIVING	LISTENING	SPEAKING	NON VERBAL SIGNALING	WRITING	READING
Specific sounds, words, actions, and ideas are produced by or represent concrete objects and true to life situations.	X	X	X	X	X	X
Through use of all the senses things can be interpreted more meaningfully.	X	X	X	X	X	X
We can determine how people feel by their overt expressions: frightened, happy, angry, sad, and etc.	X	X	X	X	X	X
Each sound, object, design, word, figure, and idea is unique in its class.	X	X	X	X	X	X
Sounds we hear, produce, or see represented by words can be near or far, high or low, loud or soft.	X	X	X		X	X
Pictures, graphs, and charts are illustrations of ideas.	X				X	X
Some stories we read, listen to, tell, or write can be about children like ourselves.	X	X	X		X	X
Imaginative thinking can be nurtured and expressed through acts of communication.	X	X	X	X	X	X
Some words, phrases, gestures, and sentences represent exaggerations.	X	X	X	X	X	X
We express our thoughts, feeling, observations, and ideas with gestures, facial expressions, physical movements, words, phrases, and sentences.	X	X	X	X	X	X

	PERCEIVING	LISTENING	SPEAKING	NON VERBAL SIGNALING	WRITING	READING
Words such as happy, lost, buzz, and others help us to mentally organize and express how we feel, how things sound, and how things look	X	X	X		X	X
When we describe, we tell or show how something looks, tastes, smells, feels, or sounds.	X	X	X	X	X	X
Name words, action words, and describing words in sentences make stories more interesting and easy to interpret.		X	X		X	X
Specific character type can be illustrated in stories and poems through description.		X	X		X	X
Words such as early, late, winter, summer, are clues to when events occur.	X	X	X		X	X
Gestures, words, sounds, ideas, and events can be categorized, classified, and related.	X	X	X	X	X	X
Use of a precise word or appropriate gesture aids to clarify thoughts, ideas, and information interpreted.	X	X	X	X	X	X
Language is a means through which past, present, and future can be expressed or sensed.	X	X	X	X	X	X
Words that have sensory appeal are more meaningful.	X	X	X		X	X

	PERCEIVING	LISTENING	SPEAKING	NON VERBAL SIGNALING	WRITING	READING
Language is a tool that permits memories to be revived.	X	X	X	X	X	X
Absurdities often make acts of communication vehicles for humor.	X	X	X	X	X	X
Comparison is used to show similarity; contrast to show differences.	X	X	X		X	X
Writers or speakers may deliberately elect topics or use words which arouse an emotional reaction to achieve an effect.	X	X	X		X	X
Prejudice refers to opinion often formed without substantiation of fact.	X	X	X		X	X
Physiological Aspects						
We assume a more relaxed position when we listen or read for pleasure.		X				X
A reasonable rate of speaking and writing insures added clarity for the listener or reader.		X				X
Position and the way a writing instrument is held can affect legibility.					X	
Moving the tongue and shaping the lips properly helps us produce sounds correctly.			X			
Eyes play as important a role in reading as do the vocal mechanism in speaking, motor mechanisms in gesturing or writing, and ears in hearing. All affect perceiving	X	X	X	X	X	X

Mechanics	PERCEIVING	LISTENING	SPEAKING	NON VERBAL SIGNALING	WRITING	READING
Some words sound alike at the beginning; Some words look alike at the beginning.	X	X				X
Some words rhyme.		X				X
Some words sound alike at the ending; some words look alike at the ending;	X	X				X
For every small letter, there is a capital letter in our alphabet.	X				X	X
Correct spelling is as important to the reader as is clear articulation to a listener.	X				X	
Consonant digraphs such as wh, ch, and ng, make a new sound.		X				X
Compound words are composed of two words that make a new word.		X			X	X
A contraction is a shortened form of two words.		X			X	X
Simple possession is indicated by adding an 's to naming words.		X			X	X
A long vowel sounds like the name of the vowel.		X	X			X
A vowel in the middle of a one syllable word is usually short.		X	X			X
A single vowel letter at the end of a word is usually long.		X	X			X

	PERCEIVING	LISTENING	SPEAKING	NON VERBAL SIGNALING	WRITING	READING
A vowel followed by r is usually neither long not short.		X	X			X
When the letters oa are together in a word, the o is usually long, and the a silent.		X	X			X
The first word of a paragraph is indented.		X	X			X
Words having a double e usually have the long e sound.		X	X			X
When words end with a silent e the preceding a or i is long.		X	X			X
In ay the y is silent and gives a its long sound.		X	X			X
When the letter i is followed by the letters gh, the i usually stands for its long sound and the gh is silent.		X	X			X
When a follows w in a word, it may have the sound a as in was.		X	X			X
When e is followed by w the vowel sound is sometimes the same as represented by oo.		X	X			X
The two letters ow make the long o sound.		X	X			X
W is sometimes a vowel and follows the vowel digraph rule.		X	X			X
When y is the final letter in a word, it usually has a vowel sound.		X	X			X

	PERCEIVING	LISTENING	SPEAKING	NON VERBAL SIGNALING	WRITING	READING
When y is used as a vowel in words, it sometimes has the sound of long i.		X	X			X
The letter a sometimes has the same sound as (o) when followed by l, w or u.		X	X			X
When a word has only one vowel letter, the vowel sound is likely to be short.		X	X			X
When there is one e in a word that ends in a consonant, the e usually has a short sound.		X	X			X
When a is followed by r and final e, we expect to hear the sound heard in care		X	X			X
When c and h are next to each other, they make only one sound.		X	X			X
Ch is usually pronounced as it is in kitchen, catch, and chair, not like sh.		X	X			X
When the letter c is followed by o or a the sound of k is likely to be heard.		X	X			X
The letter g often has a sound similar to that of j in jump when it precedes the letter i or e.		X	X			X

	PERCEIVING	LISTENING	SPEAKING	NON VERBAL SIGNALING	WRITING	READING
When ght is seen in a word, gh is silent.		X	X			X
When a word begins with kn, the k is silent.		X	X			X
When a word begins with wr, the w is silent.		X	X			X
When two of the same consonants are side by side only one is heard.		X	X			X
When a word ends in ck, it has the same last sound as in look.		X	X			X
In most two-syllable words, the first syllable is accented.		X	X			X
One vowel letter in an accented syllable has its short sound.		X	X			X
In many two-and three- syllable words, the final e lengthens the vowel in the last syllable.		X	X			X
If the first vowel sound in a word is followed by two consonants, the first syllable usually ends with the first of the two consonants.		X	X			X
If the first vowel sound in a word is followed by a single consonant, that consonant usually begins the second syllable.		X	X			X
If the last syllable of a word ends in le, the consonant preceding the le usually begins the last syllable.		X	X			X

	PERCEIVING	LISTENING	SPEAKING	NONVERBAL SIGNALING	WRITING	READING
When the first vowel element in a word is followed by th, ch, or sh, these symbols are not broken when the word is divided into syllables and may go with either the first or the second syllable.		X	X			X
The sounds p, b, m, w, and y, are produced with the lips.			X			
The sounds h, and wh are produced with breath and lips.			X			
The sounds t, d, and n, are tip of the tongue sounds.			X			
K, g, and ng, are back of the tongue sounds.			X			
The sounds for f and v are produced with the lips and teeth.			X			
Th as in "this" and th as in "the" are tongue teeth sounds.			X			
The sounds s, z, sh, zh, ch, and j are teeth sounds.			X			
L, and r, are tongue and voice sounds.			X			
In handwriting, all letters should lean the same way.					X	
Spaces between letters and words should be even when writing.					X	
All small letters should be evenly small and tall letters should be uniformly tall.					X	

	PERCEIVING	LISTENING	SPEAKING	NON VERBAL SIGNALING	WRITING	READING
In the lower case alphabet, every letter, except c and o is a straight down stroke in cursive writing.					X	
All downstrokes should be parallel.					X	
All letters in handwriting should rest on the line.					X	
When writing a word that ends in silent e, the final e is usually dropped before the addition of a suffix beginning with i.					X	
When a word ends in a consonant and y, the y is usually changed to i before adding all suffixes except those beginning with i. The y is not changed to i in adding suffixes to words ending in a vowel and y, or when adding a suffix beginning with i.					X	
The letter q is always followed by a "u" in common words.					X	
English words do not end with v.					X	
Functional Linguistics						
Levels of usage on the playground are less formal than those of the classroom.		X	X	X		
Humans possess the power of speech; animals do not.		X				
Our thoughts, ideas, desires, and feelings can be shared through communication acts.	X	X	X	X	X	X

	PERCEIVING	LISTENING	SPEAKING	NON VERBAL SIGNALING	WRITING	READING
The first word of every sentence begins with a capital letter.	X				X	X
A period indicates the end of a declarative sentence.					X	X
A question mark indicates the end of an interrogative sentence.					X	X
A sentence is a complete thought; a phrase is a part of a complete thought.	X	X	X		X	X
A statement tells something; a question asks something.	X	X	X		X	X
Intonation, phrasing, cadence, inflection, stress, gestures, and pause effect mood and meaning.	X	X	X	X	X	X
The level of usage in books is usually more formal than that used in speaking.					X	X
A title helps us identify a persons' occupation or profession.		X	X		X	X
Sentences we hear, speak, or write are more interesting if beginnings are varied.		X	X		X	X
Precise word usage effects clarity.	X	X	X		X	X
The acts and arts of communication grow and change in our mobile culture.	X	X	X	X	X	X
There are natural recurring patterns in our language.	X	X	X	X	X	X

	PERCEIVING	LISTENING	SPEAKING	NON VERBAL SIGNALING	WRITING	READING
Poems may rhyme or have free form.		X	X		X	X
A paragraph is composed of sentences that tell about one idea.		X			X	X
Communication is possible without speech.	X	X	X	X	X	X
There are many different languages and many dialectic patterns within a language.		X	X		X	X
Some words are opposite in meaning.	X	X	X		X	X
Newly coined words result when something needs to be named.	X	X	X		X	X
Some words sound the same but have different meanings and spelling.		X	X		X	X
Picture words add color to writing.		X	X		X	
The spelling of some words remains the same but pronunciation changes. (lead, lead)		X	X		X	X
Sentence fragments are acceptable during informal conversations.		X	X			
Dialects are the differences in words, sounds, stress, phrasing, and grammatical habits that are characteristic of different regions.		X	X			

	PERCEIVING	LISTENING	SPEAKING	NON VERBAL SIGNALING	WRITING	READING
Sentences should not contain more than one "no" word.		X	X		X	X
Initial letters and syllables often assume word values (UNICEF)		X	X		X	X
An exclamatory sentence expresses surprise or some other strong feeling.		X	X		X	X
Some words give clues to whether the sentence begins, holds together, or closes an idea.		X	X		X	X
Names of important people, places, events, things, months, and holidays begin with a capital letter.					X	X
Time, number, and situation affect the form of action words.		X	X		X	X
Periods are used at the end of a sentence, after an abbreviation, and after initials in proper names.					X	X
Commas are used to separate the date from the year, to set off the city from the state, after the greeting and closing of a letter, to set off quotations, and to set off words in a series.					X	X
The colon is used after the greeting in a business letter, before a long series, add to separate the hour from the minutes.					X	X

	PERCEIVING	LISTENING	SPEAKING	NONVERBAL SIGNALING	WRITING	READING
The apostrophe is used to show possession and to show when letters have been omitted.					X	X
Quotation marks set off dialogue.					X	X
Comprehension						
Words, gestures, and facial expressions may reflect more than one meaning.	X	X	X	X	X	X
Meaning is a function of context or situation.	X	X	X	X	X	X
Writing is speech written down.			X		X	X
Ideas which are expressed in writing, speaking or gesturing can be interpreted by others.		X	X		X	X
A main idea is the most important event in a story.		X			X	X
A title often gives the main idea.		X	X		X	
Printed symbols represent objects or actions.	X				X	X
Study Techniques						
Previewing is an organized rapid coverage of material enabling one to view the overall.	X	X				X

	PERCEIVING	LISTENING	SPEAKING	NON VERBAL SIGNALING	WRITING	READING
Listening, perceiving, speaking, writing, and reading are ways to obtain information or pleasure.	X	X	X		X	X
There are proper times and appropriate places for specific communication acts.	X	X	X	X	X	X
Ideas, objects, and events shared should be of literary quality, interest, or importance.	X		X		X	
Books and other materials in a library are arranged in some order.	X					X
A table of contents helps one to quickly locate a story in a book through a listing of the page on which it can be found.					X	X
Some books contain section headings that give clues to what that portion of the book will tell.					X	X
Dictionaries are used to find the meanings of unknown words.						X
Words in dictionaries are listed in alphabetical order.						X
Guide words, found at the top and bottom of a page in the dictionary, help in locating a word quickly.						X
Encyclopedias are used when we want to find out the answer to some question.						X

	PERCEIVING	LISTENING	SPEAKING	NON VERBAL SIGNALING	WRITING	READING
The volumes and topics of encyclopedias are marked in an alphabetical order.						X
A purpose should be recognized before one begins to perceive, listen, speak, write, signal, or read.	X	X	X	X	X	X
Evaluating involves use of some prescribed standard.	X	X	X	X	X	X
Some types of information can be best obtained through an interview or visit to a place.	X	X	X		X	
Pictures on book cover or in books usually help us to understand the print in books.	X				X	X
Books about one subject are grouped together on library shelves.	X					X
A dictionary contains the spellings of words.						X
Abbreviations of words can be found in dictionaries.						X
A card catalog is a listing of books that can be found in the library.	X					X
A person's name is alphabetized according to the last name.					X	X
Taking notes while reading, observing, or listening is a way of remembering information.	X	X			X	X

	PERCEIVING	LISTENING	SPEAKING	NON VERBAL SIGNALING	WRITING	READING
A dictionary gives more than one meaning for many words.						X
Newapapers contain information about people, places, and events.					X	X
Aesthetic and Cultural Appreciations						
In some stories and poems, animals and objects possess characteristics and speech like humans.	X	X	X		X	X
Some stories are about famous people and places.		X	X		X	X
Some stories contain elements of adventure, humor, suspense, or nonsense.	X	X	X		X	X
Fables often teach lessons.		X	X		X	X
Fairy tales are about imaginary people, places, and times long ago.		X	X		X	X
We can use different literary forms to express ourselves creatively, (jingles, poems, stories, and etc.)			X		X	
Various racial and national groups have contributed to our cultural heritage.		X	X		X	X
Rhythm, repetition, and alliteration add beauty to communication acts.	X	X	X	X	X	X
An autobiography is a story of a person's life written by the person himself.		X	X		X	X

	PERCEIVING	LISTENING	SPEAKING	NON VERBAL SIGNALING	WRITING	READING
There are many different kinds of magazines.						X
Bible stories are tales of old.						X
Long ago folk tales were told by traveling story tellers.		X				X
Adventure stories contain mystery and suspense.		X	X		X	X
Science fiction stories are about unreal people and events.		X	X		X	X
Series books generally all contain some of the same characters or place settings.		X	X		X	X
Many stories include true historical facts.		X	X		X	X
A jingle is a verse or words with simple rhythm and frequent repetition.		X	X		X	X
A legend is a hero story.		X	X		X	X
A play is written to be performed before an audience.		X	X		X	X
Personal stories and poems can reflect an individual's feeling for his country.		X	X		X	X
Myths were early man's explanations of the supernatural and unknown.		X	X		X	X
Stories about legendary heros in America who accomplished the humanly impossible are called "Tall Tales."		X	X		X	X

APPLICATIONS

Perceptual-Conceptual Development

	PERCEIVING	LISTENING	SPEAKING	NON VERBAL SIGNALING	WRITING	READING
Ability to effectively organize perceptual stimuli, generalize them, set concepts, and interpret them to others.	X	X	X	X	X	
Habit of acquiring and employing a diversified vocabulary.	X	X	X		X	X
Ability to associate specific sounds, words, actions, or ideas with concrete objects and true-to-life situations.	X	X	X	X	X	X
Skill in imagining and describing sounds, odors, textures and tastes.	X	X	X	X	X	X
Ability to interpret expressions that depict an emotion, moods, purposes, and viewpoints.	X					X
Skill in discriminating between the imaginary and real, fact or fiction.	X	X	X		X	X
Ability to feel the effects of each sense upon the others.	X	X	X	X	X	X
Ability to interpret humor, nonsense, imagination, or surprise.	X	X	X	X	X	X
Habit of using words which precisely depict or arouse sensory impressions.			X		X	
Ability to appropriately associate concepts related to time, space, cause, effect, number, color, humans, animals, animate, inanimate, abstract, concrete, emotion, position, direction, and etc.	X	X	X	X	X	X
Growing ability to employ more complex thinking and higher order association when communicating.	X	X	X	X	X	X

	PERCEIVING	LISTENING	SPEAKING	NON VERBAL SIGNALING	WRITING	READING
Skill in categorizing perceptions, gestures, symbols, words, phrases, and sentences.	X	X	X		X	X
Habit of building and extending concepts through new experiences.	X	X	X	X	X	X
Ability to express thoughts precisely with words, phrases, sentences, or actions.	X	X	X	X	X	X
Habit of relating what one perceives, hears, says, writes, reads, or demonstrates to personal experiences.	X	X	X	X	X	X
Skill in recognizing and interpreting the direct and implied.	X	X	X	X	X	X
Skill in recognizing figurative, idiomatic, or picturesque language.	X	X	X	X	X	X
Skill in recognizing elements of comparison and contrast.	X	X	X	X	X	X
Skill in interpreting multiple word meanings.		X	X		X	X
Ability to retain increasingly more complex ideas for future recall.	X	X			X	X
Ability to determine the effects of characterization, time, place, or unusual events upon the mood in a situation.	X	X	X	X	X	X
Skill in selecting the most appropriate synonyms or pertinent analogies when illustrating or clarifying.	X	X	X	X	X	X

Physiological Aspects	PERCEIVING	LISTENING	SPEAKING	NON VERBAL SIGNALING	WRITING	READING
Habit of assuming an appropriate postural position suited to the purpose set for an act of communication.	X	X	X	X	X	X
Habit of speaking in a naturally pitched, audible voice, maintaining appropriate rate and rhythm, with proper pause and breath			X			
Habit of facing the desk squarly, keeping both shoulders at the same level when writing					X	
Habit of sitting back in the chair with feet resting comfortably on the floor, resting both forearms on the desk at an equal distance from the body, and keeping the head in a natural position when writing.					X	
Habit of holding the pencil between the thumb and second finger with the first finger resting on the pencil at a distance of an inch or more from the pencil point.					X	
Habit of rounding the hand, supporting it on the finger tips of the third and fourth fingers, and allowing it to glide on the fingertips when writing.					X	
Habit of tilting the paper toward the left so that the lines of the paper and the writing arm form a right angle. (The left-handed writer tilts the paper toward the right at a similar angle)					X	
Habit of placing the left hand (right hand of left handed) at the top of the paper to hold it in place when writing.						X

	PERCEIVING	LISTENING	SPEAKING	NON VERBAL SIGNALING	WRITING	READING
Habit of using left to right eye movements in reading or observing	X					X
Ability to note differences and similarites between sounds, objects, textures, and etc.	X	X				X
Habit of reading a book from front to back; a page from top to bottom						X
Habit of using the lips, tongue, and teeth to enunciate clearly and correctly.			X			
Ability to produce orally all the consonant and vowel sounds and combinations.			X			
Habit of placing written and graphic material at eye level for ease of reading at the chalkboard						X
Skill in forming small and capital letters in manuscript or cursive writing in the prescribed system.					X	
Habit of being relaxed when engaging in a communication act.	X	X	X	X	X	X
Habit of maintaining a reasonable rate when speaking or writing.			X		X	
Habit of wearing glasses if prescribed.	X				X	X
Habit of holding books comfortably.						X

Mechanics	PERCEIVING	LISTENING	SPEAKING	NON VERBAL SIGNALING	WRITING	READING
Ability to recognize rhyming sounds.		X				X
Ability to perceive likenesses and differences in beginning consonant sounds, ending consonant sounds, and medial consonant sounds.		X				X
Skill in identifying and associating upper and lower case letters.						X
Skill in making symbol-sound associations		X	X		X	X
Skill in recognizing and discriminating between basic vocabulary words.		X				X
Habit of using configuration clues in word identification.						X
Ability to perceive and differentiate between consonant blends in all three positions.	x	x				X
Skill in noting double consonants.		X				X
Ability to recognize consonant digraphs in all three positions. wh ch th sh ck ng		X				X
Skill in recognizing consonant combinations having the same sound ph gh		X				X
Ability to distinguish between long and short vowel sounds		X				X
Skill in recognizing silent letters in words·		X				X

	PERCEIVING	LISTENING	SPEAKING	NON VERBAL SIGNALING	WRITNG	READING
Habit of noticing the effects of the letter "r" following a vowel.		X				X
Skill in recognizing the effects of l and w on vowel sounds.		X				X
Ability to note that vowel digraphs have one sound ay ai oa ee ea ie oe au.		X				X
Skill in recognizing the dipthongs ow ou oy oi ew aw.		X				X
Habit of applying generalizations for "c" and "g".		X				X
Ability to recognize common word families (ay, ake).		X				X
Habit of noting word length as a clue to identification.						X
Skill in recognizing compound words and their components.		X				X
Ability to recognize contracted word forms and their derivatives.		X				X
Skill in noting possessives of words.		X				X
Ability to recognize root or base words.		X				X
Habit of noting the effects of specific word endings.		X				X
Ability to recognize effects of some prefixes and suffixes (a, un, ex, dis, ful, les, ness).		X				X

	PERCEIVING	LISTENING	SPEAKING	NON VERBAL SIGNALING	WRITING	READING
Skill in forming plurals by adding s, es, ics, by changing f to v and adding es.		X				X
Skill in applying simple generalizations for syllabications.		X				X
Growing skill in hyphenating words correctly.					X	X
Habit of using consonant substitution in identifying or spelling new words.					X	X
Ability to spell correctly the words needed, referring to known generalizations.					X	
Habit of indenting the first word of a new paragraph.					X	
Functional Linguistics						
Ability to recognize the essentials and structure of stories and poems; parts of letters, invitations, notes; and varied formats for reports.		X	X		X	X
Habit of being courteous in all communication.	X	X	X	X	X	X
Growing ability to write, speak, and recognize simple and complex sentences.	X	X	X		X	X
Habit of employing and noting generalizations for capitalization and punctuation that affect structure.			X		X	X

	PERCEIVING	LISTENING	SPEAKING	NON VERBAL SIGNALING	WRITING	READING
Skill in discriminating between a sentence and a phrase.		X	X		X	X
Ability to differentiate between a question, statement, or exclamation.		X	X		X	X
Habit of employing appropriate intonation, phrasing, cadence, inflection, stress, gestures, and pause to effect mood or meaning.	X		X	X		X
Growing ability to participate effectively in communication activities such as storytelling, telephoning, sharing, describing, conversing, discussing, dramatizing, pantomiming, interviewing, reporting, writing, poetry and stories, choral speaking, and others.	X	X	X	X	X	X
Growing ability to imitate and employ levels of usage appropriate to the setting and situation.			X		X	X
Ability to recognize recurring patterns and rhythm in our language.	X	X	X		X	X
Habit of including a person's title when addressed.			X		X	
Habit of varying beginnings of sentences in a story or paragraph.			X		X	
Growing ability to write cohesive paragraphs and stories.					X	
Habit of using non-vocal signals when appropriate.				X		
Habit of including only one negative in a given sentence.			X		X	
Skill in noting and selecting words that designate introductory, transitional, and concluding remarks in a story.		X	X		X	X

	PERCEIVING	LISTENING	SPEAKING	NON VERBAL SIGNALING	WRITING	READING
Habit of noting time, number, and situation before selecting the form of an action word.			X		X	
Habit of naming self last.			X		X	
Habit of using a helping word with some action words.			X		X	
Habit of using those and them correctly.			X		X	
Skill in forming compound pronouns such as themselves and himself correctly.			X		X	
Habit of using I, me, we, she, him, her, they, and us correctly.			X		X	
Skill in using "a", "the", and "an", properly.			X		X	
Habit of employing the correct degree of comparison with adjectives and adverbs.			X		X	
Ability to employ the correct form of an irregular verb.			X		X	
Comprehension						
Skill in interpreting, giving, or following a simple direction.		X		X	X	X
Ability to compose or recognize a simple sentence that expresses a complete thought.		X	X		X	X

	PERCEIVING	LISTENING	SPEAKING	NON VERBAL SIGNALING	WRITING	READING
Skill in recognizing and interpreting the main idea or theme.	X	X	X	X	X	X
Skill in recognizing and expressing sequence in events, stories, pictures, poetry, and etc.	X	X	X	X	X	X
Ability to recognize details, directly stated or observed and implied.	X	X			X	X
Skill in recognizing and employing picture words and action words.					X	X
Ability to find clues which help in anticipating the next step, event, or outcome.	X	X			X	X
Skill in using context clues as an aid to meanings.	X	X		X	X	X
Ability to include important details to support a main theme.	X	X	X	X	X	X
Ability to arrive at judgements and draw reasonable conclusions.	X	X	X	X	X	X
Skill in perceiving relationships so that satisfactory deductions, inferences and conclusions can be drawn.	X	X	X	X	X	X
Ability to generalize and predict outcomes.	X	X	X	X	X	X
Skill in determining the relevant and irrelevant.	X	X	X	X	X	X
Ability to note and express cause and effect relationships.	X	X	X	X	X	X

	PERCEIVING	LISTENING	SPEAKING	NON VERBAL SIGNALING	WRITING	READING
Skill in determining the authenticity, applicability, importance, interest value, or literary quality of an informational or pleasurable event or material.	X	X	X	X	X	X
Skill in organizing and summarizing.	X	X	X	X	X	X
Habit of perceiving, listening, speaking, and reading in thought units.	X	X	X		X	X
Study Techniques						
Habit of creating the best conditions possible for effective study or observation.	X	X	X		X	X
Habit of beginning a task promptly.	X	X	X		X	X
Habit of continualling evaluating personal performance in all acts of communication.	X	X	X	X	X	X
Habit of being discriminative in selecting that which is to be shared with others.	X	X	X	X	X	X
Ability to formulate simple captions for labeling objects and pictures.			X		X	X
Ability to attractively illustrate ideas, events, people, and objects graphically.	X				X	

	PERCEIVING	LISTENING	SPEAKING	NON VERBAL SIGNALING	WRITING	READING
Habit of being quiet while using the library.						X
Habit of presenting materially in a logical order.			X		X	
Habit of proofreading all written work.						X
Habit of observing, listening, and reading a variety to obtain or substantiate information.	X	X			X	X
Habit of directing others to sources of information presented.					X	X
Ability to employ accepted library procedures.					X	X
Habit of writing (taking notes) specific information to be recalled.					X	
Skill in locating proper reference tools in the library.						X
Habit of using locational aids such as tables of contents in books, guide words in dictionaries, and the index of encyclopedias.						X
Ability to interpret vocabulary peculiar to specific content areas.		X	X		X	X
Skill in recognizing organizational patterns and factual relationships peculiar to a specific content area.		X	X		X	X

	PERCEIVING	LISTENING	SPEAKING	NON VERBAL SIGNALING	WRITING	READING
Ability to interpret specialized devices such as picture graphs and symbols.			X		X	X
Habit of adjusting rate to purpose.	X	X	X	X	X	X
Growing facility in library reference techniques.					X	X
Aesthetic and Cultural Appreciations						
Growing ability to select experiences and materials that meet a personal need or widen life's scope.	X	X	X	X	X	X
Ability to relate ideas gained through communication acts to personal living and personal problems.	X	X	X	X	X	X
Growing ability to understand one'self from observing, listening to, writing, or reading about others.	X	X	X		X	X
Habit of recognizing and enjoying animation of objects or animals.		X	X		X	X
Ability to recognize the characteristics of Mother Goose Rhymes.		X				X
Habit of associating a famous person's name with his accomplishment.	X	X	X		X	X
Ability to relate holidays to personal experiences and particular events.	X	X	X		X	X

	PERCEIVING	LISTENING	SPEAKING	NON VERBAL SIGNALING	WRITING	READING
Skill in differentiating between the fairy tale, fable, legend, folktale, and myth.		X	X		X	X
Habit of enjoying and sensing elements that produce beauty in varieties of verse and prose.		X	X		X	X
Habit of sharing cultural and aesthetic experiences with others.			X		X	X
Skill in reading well orally in order to share aesthetic and cultural experiences.			X		X	X
Skill in employing a variety of literary forms to express ourselves.			X	X	X	X
PERSONAL RESPONSES						
Perceptual= Conceptual Development						
A continuing intensity of intellectual curiosity.	X	X	X	X	X	X
Desire to experience life in its fullest through all sensory modalities.	X	X	X	X	X	X
Respect for uniqueness in sounds, objects, design, words, figures or ideas, humans, and experiences.	X	X	X	X	X	X

	PERCEIVING	LISTENING	SPEAKING	NON VERBAL SIGNALING	WRITING	READING
Flexibility, fluency, and originality in creative communication.	X	X	X	X	X	X
Respect for the beauty and power in acts of communication.	X	X	X	X	X	X
Desire to express that which is sensed.	X		X	X	X	
Physiological Aspects						
Respect for and care of eyes, ears, vocal, and motor mechanisms through which communication is possible.	X	X	X	X	X	X
Desire to listen carefully, articulate and demonstrate accurately, observe and read efficiently, and write legible.	X	X	X	X	X	X
Mechanics						
Desire to use techniques of identification, vocal production, graphic illustration, and spelling independently.	X	X	X		X	X
Flexibility in election of a mechanical aid in a process of communication.	X	X	X	X	X	X
Functional Linguistics						
A growing desire to participate effectively in functional communication processes.	X	X	X	X	X	X
Increasing confidence and security in communication functions.	X	X	X	X	X	X

	PERCEIVING	LISTENING	SPEAKING	NON VERBAL SIGNALING	WRITING	READING
Kind acceptance of the linguistic differences, overt or inhibited, of others as manifested through communication.	X	X	X	X	X	X
Respect for and appreciation of the standards of linguistic structure.	X	X	X	X	X	X
Appreciation of the gift of linguistic organization through higher order thought processing.	X	X	X	X	X	X
Growing desire to employ linguistic signals (verbal and non-vocal) to secure understanding.	X	X	X	X	X	X
Respect for the changes in language in our changing society.	X	X	X	X	X	X
Desire to employ variety when participating in any communication act.	X	X	X	X	X	X
Comprehension						
Desire to employ techniques that will best insure understanding while communicating.	X	X	X	X	X	X
Guarding against personal bias and prejudice while interpreting.	X	X	X	X	X	X
Study Techniques						
Desire to create the best conditions possible for effective study or observation.	X	X	X	X	X	X

	PERCEIVING	LISTENING	SPEAKING	NON VERBAL SIGNALING	WRITING	READING
Desire to begin tasks promptly.	X	X	X	X	X	X
Desire to continually evaluate personal performances in all acts of communication.	X	X	X	X	X	X
Appreciation of sources for information and pleasure.	X	X	X	X	X	X
Respect for library procedures.						X
Aesthetic and Cultural Appreciations.						
Growing respect for the contributions of others through communication.	X	X	X	X	X	X
Desire to extend, expand, and enrich one's personal life through the six language arts.	X	X	X	X	X	X
Enjoyment and appreciation of beauty in literature and life.	X	X	X	X	X	X
Desire to make worthwhile contributions to one's culture.	X	X	X	X	X	X
Growing appreciation of varied literary forms.	X	X	X	X	X	X

FOOTNOTES

(1) Strickland, Ruth. "Reading in Its Setting," Report of the Conference on Basic Issues in Teaching of English, *College English*, Oct., 1959, Supplement.

(2) Wheeler, Lester R. and Viola D. "Some Characteristic Differences and Similarities among the Language Arts," *Journal of Education*, No. 138, Oct., 1955, pp. 2-8.

(3) Hildreth, Gertrude. "Experience Related Reading for School Beginners," *Elementary English*, Vol. 42, No. 3, March, 1965, pp. 280-297.

(4) Loban, Walter. "The Language of Elementary School Children," *NCTE Research Report No. 1*, Illinois National Council of Teachers of English, 1963.

(5) Martin, Clyde. "Developmental Interrelationships Among Language Variables in Children of the First Grade," *Elementary English*, March, 1955, pp. 167-171.

(6) Winter, Clotilda. "Interrelationships Among Language Variables in Children of the First and Second Grades", Elementary English, Vol. 34, Feb., 1957, pp. 108-113.

(7) Allen, Roach Van and Lee, Doris. *Learning to Read Through Experience*, New York: Appleton Century Crofts, 1963.

(8) Slack, Robert. " A Report on Project English," *Elementary English*, Vol. 41, No. 7, Nov., 1964, pp. 796-800.

(9) Allen, Roach Van, *loc*, *cit*.

APPENDIX B

INTEGRATED EXPERIENCE APPROACH TO COMMUNICATION GUIDES -- LEVEL II AND LEVEL III

(Under Separate Cover)

APPENDIX C

SAMPLES OF MEASUREMENT INSTRUMENTS UNIQUE TO THE PITTSBURGH PROJECT

DIAGNOSTIC RATING OF LANGUAGE OUTCOMES FOR SECOND GRADERS

(Rating Key: 1 - Lowest level of achievement
3 - Average level of achievement
5 - Highest level of achievement

CHILD'S NAME ______________________________

	1	2	3	4	5
I. The Child Understands That:					
A. ideas, desires, feelings, and experiences can be expressed through use of appropriate words and can be recorded					
B. information and pleasure can be shared or obtained by listening, writing, reading, or speaking					
C. poems, true stories, fairy tales, and fables, have distinctive characteristics					
D. past, present, and future can be expressed through language					
E. there are appropriate times and places for specific language activities					
II. The Child Has Acquired the Habit of:					
A. evaluating personal performance in all language activities					
B. obtaining information and pleasure through a variety of the mass media					
C. selecting appropriate study techniques for attacking independent problems					
D. employing courtesy in all language activities					
E. becoming increasing discriminative in selecting quality communication offerings					
III. The Child Has Acquired the Ability to:					
A. participate effectively in functional language activities such as:					
1. conversation and discussion					
2. sharing					
3. story telling					

		1	2	3	4	5
4.	contributing to dictated stories and poems					
5.	writing individual stories or poems					
6.	dramatizing or choral reading					
7.	writing simple reports					
B.	recognize a stock of basic vocabulary words					
C.	utilize aural and written context clues to interpretation					
D.	critically interpret pictoral and graphic materials					
E.	functionally apply word recognition techniques when reading					
F.	recognize personal purposes for listening, speaking, writing, and reading					
G.	recognize elements of humor, reality, nonsense, adventure and the imaginary					
H.	comprehend materials he reads and listens to					
I.	recognize accepted classroom library procedures and study techniques					
J.	independently use picture dictionaries, word files, or appropriate sources in creative writing					
IV.	The Child Exhibits:					
A.	respect for the contributions of others in communication processes					
B.	a desire to listen, speak, write, and read effectively					
C.	a desire to share ideas, feelings, and experiences through speaking, listening, reading and writing					
D.	enjoyment of various literary forms					
E.	a desire to extend his areas of reading interest					
F.	growing appreciation of selections of literary worth					

DIAGNOSTIC RATING OF LANGUAGE OUTCOMES FOR THIRD GRADERS

(Rating Kay: 1 - Lowest level of Achievement
2 - Average level of Achievement
3 - Highest level of Achievement

CHILD'S NAME ______________________

I. The Child Knows That:	1	2	3	4	5
A. gestures, facial expressions, and other physical movements can be means of communicating without words or can be means for more adequate interpretation of verbal communication					
B. ideas, concepts, desires, feelings, information, and experiences can be expressed through appropriate language.					
C. each literary form has a distinctive characteristic					
D. there are appropriate times and places for specific communication acts					
E. one's personal worth can be manifested, recognized, and enhanced with growth toward language maturity					
F. effective self-evaluation generates further growth					
G. the habit of pursuing tasks independently					
H. the ability to acquire and employ a diversified vocabulary					
I. the ability to adhere to standards of established linguistic structure					
J. the ability to use reference sources in substantiating perceptions, apprehension, reflection, and expression					
K. the ability to interpret the direct or implied					

	1	2	3	4	5
II. The Child Had Acquired the Habit of:					
A. employing courtesy in all language activities					
B. pursuing tasks independently					
C. listening attentively					
D. speaking clearly and at an appropriate rate					
E. holding writing instruments properly and maintaining an appropriate posture					
F. proofreading his own work					
III. The Child Has Acquired the Ability to:					
A. participate effectively in functional language activities such as:					
1. conversation					
2. discussion					
3. sharing					
4. story telling					
5. writing creativity, independently					
6. dramatizing or choral speaking					
7. writing content area reports					
8. telephoning					
9. writing letters					
10. making announcements					
11. reading orally					
B. select appropriate strategies for unlocking words in reading such as:					
1. at sight					
2. using context clues					

	1	2	3	4	5
3. picture clues					
4. noting phonetic elements:					
a. consonant sounds and blends					
b. vowel sounds and digraphs					
c. vowel controls (r,l,w)					
5. noting structural elements:					
a. compound words					
b. root words					
c. contractions					
d. syllabic patterns					
C. read and understand:					
1. main ideas					
2. details					
3. sequence					
4. directions					
5. relationships and inferences					
6. outcomes					
D. listen and understand:					
1. main idea					
2. details					
3. sequence					
4. directions					
E. express his ideas clearly through speech					
F. express his ideas clearly through writing					
G. employ mechanics of writing such as:					
1. accurate spelling					

	1	2	3	4	5
2. legible handwriting					
3. correct punctuation					
4. appropriate capitalization					
5. correct indention of paragraphs					
6. correct grammar and usage					
H. use reference materials such as:					
1. dictionaries					
2. related source books					
3. encyclopedias					
IV. The Child Exhibits:					
A. a desire to share ideas, feelings, and experiences					
B. flexibility, fluency, and originality of thought					
C. increasing self-confidence while communicating					
D. respect for the contributions of other in communication processer					
E. enjoyment when reading					
F. a growing appreciation of selections of literary worth.					

LISTENING ABILITIES TEST

NAME ____

SCHOOL ______________________________

TEACHER ______________________________

SCORE (number right) _______________

Circle the correct answer to each question. Your teacher will read each question to you

STORY #1

1. This story is about (a) a bluejay (b) an owl (c) a robin (d) a sparrow
2. The story is about the building of a (a) house (b) dam (c) hut (d) nest
3. The outside of the little home was made of (a) grass (b) straw and mud (c) mud and grass (d) grass and straw
4. The nest was lined with (a) grass (b) straw (c) mud (d) apple leaves
5. The nest was in (a) a chimney (b) a box (c) a cherry tree (d) an apple tree
6. The number of eggs was (a) three (b) four (c) twelve (d) fourteen
7. The eggs were the color of (a) an apple (b) a robin (c) the sky (d) a tree
8. The number of days the mother sat on the eggs was (a) three (b) four (c) ten (d) fourteen
9. The baby birds were (a) angry (b) hungry (c) sad (d) busy
10. The baby robins came from (a) cocoons (b) nests (c) trees (d) eggs

STOP! Do not turn the page until
you are told to do so

SCORE (number correct) __________

STORY #2

1. The string was tied to the (a) food (b) fish (c) pebbles (d) bowl

2. The bell was (a) in the water (b) on the man (c) outside the bowl
   (d) on the fish

3. The man fed the fish with (a) flies (b) gold (c) string (d) water fleas

4. The fish were not fed for (a) several weeks (b) a month (c) a few days
   (d) eight days

5. The bell rang when the fish (a) swam (b) pulled the string
   (c) were hungry (d) drank

6. The fish were taught to (a) swim (b) nibble food (c) ring a bell
   (d) catch flies

7. To train the fish required (a) several days (b) two weeks (c) four weeks
   (d) one day

8. The fish pulled the string when they wanted to (a) sleep (b) eat
   (c) swim (d) play

9. This story tells you how to (a) feed fish (b) catch fish (c) cook fish
   (d) train fish

10. Choose the best title for this story: (a) Hungry Goldfish
    (b) Fish Frolics (c) Nibble the Bait (d) The Goldfish Dinner Bell

STOP! Do not turn the page until
you are told to do so

SCORE (number correct) __________

STORY #3

1. These rules tell you what to do (a) while reading a book (b) while on the playground (c) while on a hide (d) while in the dining room
2. Stand (a) at the left of the chair (b) at the right of the chair (c) behind the chair (d) in front of the chair
3. In order not to drop silver, be (a) slow (b) quick (c) careful (d) neat
4. One may leave the table (a) at any time (b) if he says "please" (c) at the end of the meal (d) before the dessert
5. When not in use, the knife and fork should be place (a) on the saucer (b) in the glass (c) across the plate (d) beside the plate
6. One should chew (a) while he is drinking (b) with his mouth closed (c) making a noise with the lips (d) quickly
7. When not in use the spoon should be (a) in the cup (b) in the glass (c) on the plate (d) on the saucer
8. Do not drink (a) while there is solid food on the plate (b) while the rest are talking (c) while there is solid food in the mouth (d) before the others sit down.

STOP! You've Finished.

SCORE (number correct) ________

LISTENING ABILITIES TEST

NAME ______________________________

SCHOOL ______________________________

TEACHER ______________________________

SCORE (NUMBER RIGHT) ____________________

Circle the correct answer to each question. Your teacher will read each question to you.

STORY #1

1. The potato has (a) one part (b) two parts (c) three parts (d) four parts
2. The best part of the potato is the (a) middle (b) skin (c) outside rim (d) inside rim
3. If you cannot eat the whole potato, eat the (a) outside rim (b) inside (c) middle (d) eyes
4. The skin is (a) better than the outside rim (b) better than the inside rim (c) as good as the outside rim (c) no good at all
5. Almost every day most American children eat (a) rice (b) beans (c) dates (d) potatoes
6. Cut a slice of potato as then as (a) cardboard (b) a silver dollar (c) paper (d) a book
7. The part of the potato often wasted is the (a) middle (b) inside (c) outside rim (d) eyes
8. What does this lesson tell about potatoes? (a) how to cook them (b) How to plant them (c) where to buy them (d) how to eat them

STOP! Do not turn page until
you are told to do so.

SCORE (NUMBER CORRECT) ____________

QUESTIONS FOR STORY # 2

1. This story is chiefly about which two things? (a) two screams (b) satellite and Laika (c) woman and her children (d) Sputnik II and a metal box

2. A woman learned that the moon was due to be over her town by (a) hearing the jet (b) observing the sky (c) seeing the demolition team (d) watching television

3. Sputnik II was whizzing (a) to Fort Walton (b) around the earth (c) to Eglin Air Force Base (d) toward the jet

4. The crashing object was dug up by (a) the Air Force (b) a woman (c) a demolition team (d) the Army

5. How many pounds did Sputnik II weigh? Just over (a) 1000 (b) 500 (c) 250 (d) 100

6. After the plunge to earth of the object, the family started (a) digging (b) screaming (c) watching (d) toward Eglin Air Force Base

7. What did the demolition team do? (a) searched for the woman (b) dug a ten-foot hole (c) searched for Sputnik II (d) dug up a metal box

8. When did the screaming sounds occur? (a) at night (b) early morning (c) mid-morning (d) late afternoon

STOP! Do not turn the page until
you are told to do so.

SCORE (NUMBER CORRECT) ____________________

QUESTIONS FOR STORY # 3

1. TWO MAIN THOUGHTS ARE ABOUT (a) animals in an unusual zoo (b) an unusual zoo and a wild alligator (c) the Brelands (d) intelligent animals and an ordinary zoo
2. The toy trains are run by (a) turkeys (b) foxes (c) apes (d) monkeys
3. What pecks four times when asked for the square root of sixteen? (a) turkey (b) crow (c) chicken (d) parrot
4. This selection is (a) educational and dictitious (b) humorous and fictitious (c) ficticious and true (d) educational and humorous
5. Foxes (a) run toy trains (b)put clothes in a laundry hamper (c) leap through hoops (d) jump for grapes
6. Which one of these animals learns most quickly? (a) parakeet (b) parrot (c) monkey (d) dog
7. What did the alligator see in the store window? (a) toy trains (b) baby alligators (c) alligator bag (d) grapes
8. Which was wild? (a) pig (b) dog (c) cat (d) alligator

STOP ! Do not turn page until
you are told to do so

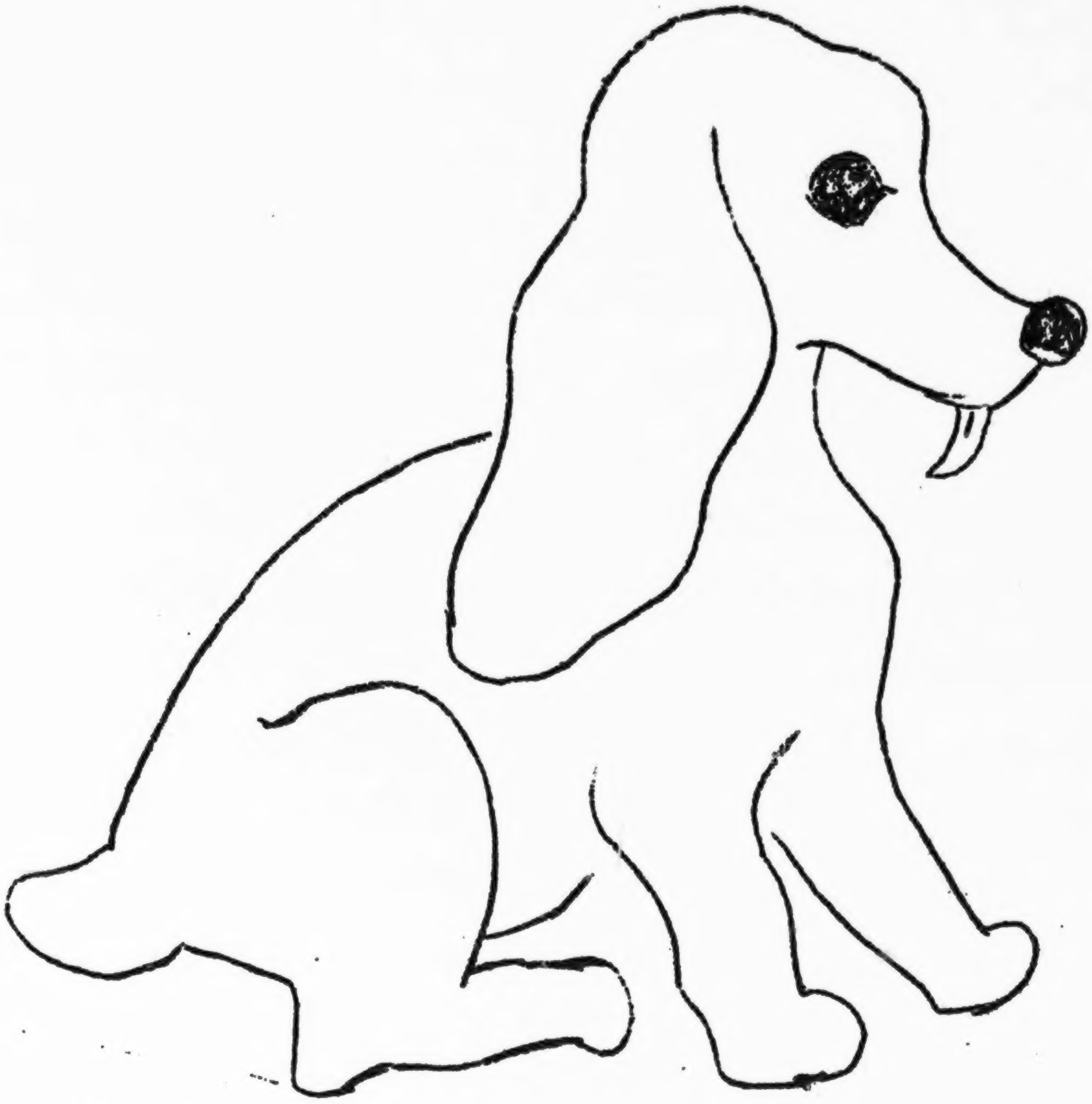
SCORE (NIMBER CORRECT)________________________

STORY # 4

1. How many times was Lou Gehrig named the year's star American League player? (a) one (b) two (c) three (d) four
2. Each of the three years his team won the World Series, he was (a) catcher (b) pitcher (c) second baseman (d) captain
3. He became a fine first baseman (a) naturally (b) by long training (c) by great effort (d) with physical strength
4. Lou Gehrig showed (a) modesty (b) pride (c) conceit (d) confidence
5. This player was given the title of (a) Old Stalwart (b) Old Faithful (c) Old Ironsides (d) Iron Horse
6. Lou Gehrig's fellow players gave him a special title in (a) admiration (b) loyalty (c) fear (d) envy
7. Gehrig's record of consecutive games played was (a) 213 (b) 2000 (c) 2030 (d) 2130
8. Lou's home diamond was in (a) New York (b) Cincinnati (c) St. Louis (d) Chicago

STOP! You've Finished.

SCORE (NUMBER CORRECT)______________________________



1. ______________________________

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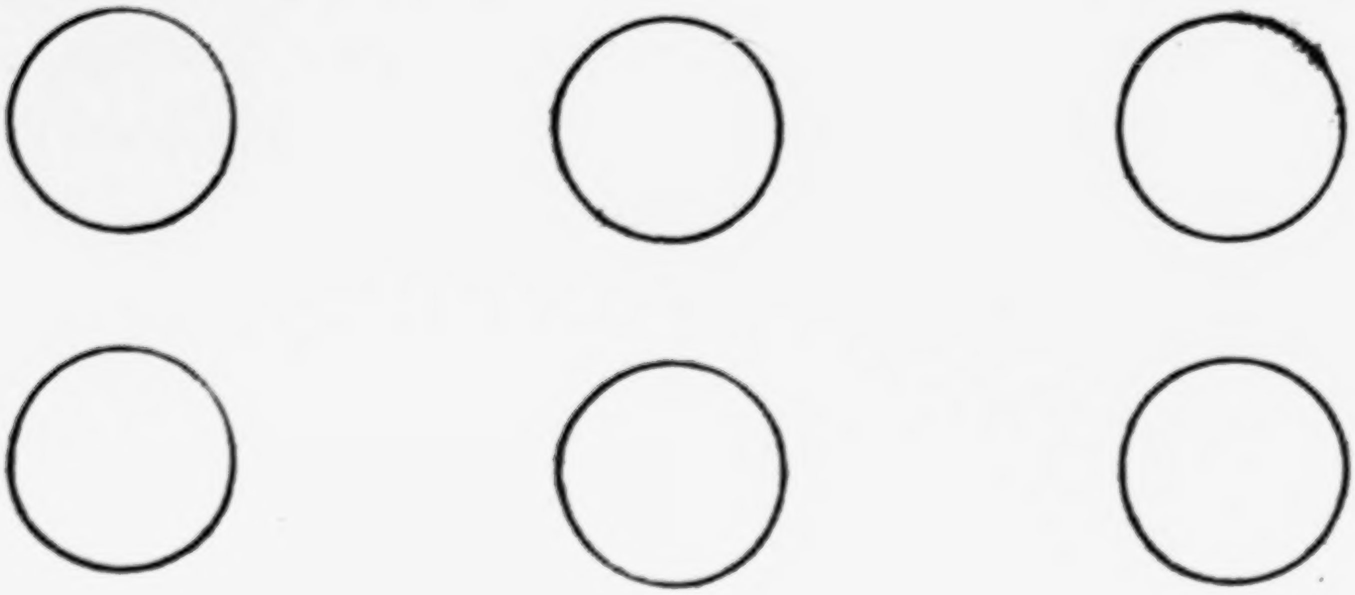
25. ______________________________

NAME ______________________________

SCHOOL ______________________________

TASK 2: CIRLCES

In ten minutes see how many objects or pictures you can make from the circles below and on the next page. The circles should be be the main part of whatever you make. With pencil or crayon add lines to the circles to complete your picture. You can place marks inside the circles, outside the circles, or both inside and outside the circles -- wherever you want to in order to make your picture. Try to think of things that no one else will think of. Make as many different pictures or objects as you can and put as many ideas as you can in each one. Make them tell as complete and as interesting a story as you can. Add names or titles below the objects.



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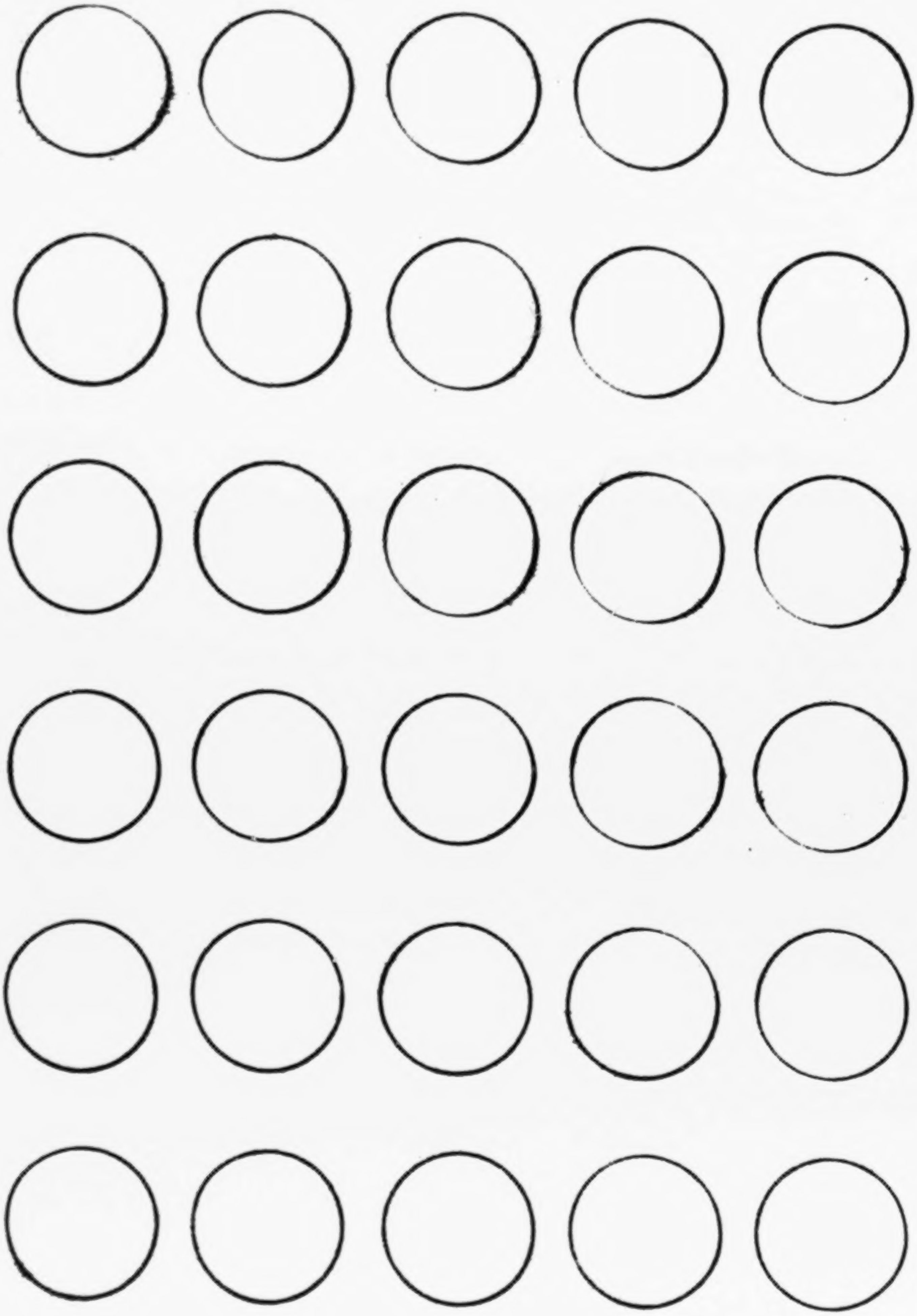

NAME ______________________________ SCHOOL ______________________________

TASK 4: UNUSUAL USES (Tin Cans)

Most people throw their empty tin cans away, but they have thousands of interesting and unusual uses. In the spaces below, list as many of these interesting and unusual uses as you can think of. Do not limit yourself to any one size of can. You may use as many cans as you like. Do not limit yourself to the uses you have seen or heard about; think about as many possible uses as you can.

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22. ______________________________
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24. ______________________________

APPENDIX D

INTERCORRELATION TABLES OF FINAL VARIABLES

VARIABLE CODE TO CORRELATION MATRIX FOR MEASURES OF FINAL ACHIEVEMENT IN SECOND GRADE

Variable

University of Pittsburgh Diagnostic Rating of Language Ourcomes, 1966

1. Understandings
2. Habits
3. Skills
4. Attitudes

University of Pittsburgh Informal Inventory, 1966

5. Listening Comprehension

San Diego Pupil Inventory

6. Reading Attitudes

Stanford Achievement Test

7. Word Meaning
8. Paragraph Meaning
9. Science and Social Studies Concepts
10. Spelling
11. Word Study Skills
12. Language
13. Arithmetic Computation
14. Arithmetic Concepts

Inventory of Book Behaviors, Coordinating Center, University of Minnesota

15. Number of Books Read Completely
16. Number of Books Read Partially
17. Eagerness to Read
18. Maturity of Reading Choices

CORRELATION MATRIX FOR MEASURES OF FINAL ACHIEVEMENT IN SECOND GRADE

Var.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	1.0000	.8507	.8733	.8089	.2217	.2320	.5065	.5680	.3281	.5358	.4813	.5490	.2899	.4899	.3257	.0467	.5511	.5697
2	.8507	1.0000	.8768	.8323	.2695	.2042	.5999	.6148	.3444	.6051	.5734	.5901	.3681	.5432	.3170	-.0045	.6456	.6544
3	.8733	.8768	1.0000	.8633	.2049	.2380	.5668	.5899	.3154	.6048	.5368	.5312	.3209	.5191	.3295	.0319	.5798	.6354
4	.8089	.8323	.8633	1.0000	.2297	.1749	.5668	.5390	.3427	.5392	.4693	.5588	.2664	.4629	.3006	.0122	.5238	.5645
5	.2217	.2695	.2049	.2297	1.0000	.0894	.3850	.4101	.4058	.1284	.2081	.3193	.2375	.2458	.1471	-.1314	.1522	.1323
6	.2320	.2042	.2380	.1749	.0894	1.0000	.2465	.1984	.0708	.2704	.2647	.2114	.1045	.1029	.1594	.0817	.2681	.1706
7	.5065	.5999	.5668	.5668	.3850	.2465	1.0000	.7367	.5085	.6427	.5388	.6482	.3400	.5670	.1653	-.0397	.4863	.4863
8	.5680	.6148	.5899	.5390	.4101	.1984	.7367	1.0000	.4972	.6790	.5232	.6682	.2814	.5910	.2062	-.0122	.5393	.5134
9	.3281	.3444	.3154	.3427	.4058	.0708	.5085	.4972	1.0000	.1868	.3948	.4513	.1999	.4480	.1070	.0635	.2760	.2441
10	.5358	.6051	.6048	.5392	.1284	.2704	.6427	.6790	.1868	1.0000	.6001	.6094	.2782	.4870	.2070	-.0239	.5956	.5513
11	.4813	.5734	.5368	.4693	.2081	.2647	.5388	.5232	.3948	.6001	1.0000	.5965	.3643	.5852	.3269	.0130	.6397	.5885
12	.5490	.5901	.5312	.5588	.3193	.2114	.6482	.6682	.4513	.6094	.5965	1.0000	.3011	.5999	.3133	-.0828	.5221	.5190
13	.2899	.3681	.3209	.2664	.2375	.1045	.3400	.2814	.1999	.2782	.3643	.3011	1.0000	.4856	.2615	.0564	.3819	.3018
14	.4899	.5432	.5191	.4629	.2458	.1029	.5670	.5910	.4480	.4870	.5852	.5999	.4856	1.0000	.2745	.0424	.4528	.4278
15	.3257	.3170	.3295	.3006	.1471	.1594	.1653	.2062	.1070	.2070	.3269	.3133	.2615	.2745	1.0000	.0099	.3614	.3520
16	.0467	-.0045	.0319	.0122	-.1314	.0817	-.0397	-.0122	.0635	-.0239	.0130	-.0828	.0564	.0424	.0099	1.0000	-.0030	-.0356
17	.5511	.6456	.5798	.5238	.1522	.2681	.4863	.5393	.2760	.5956	.6397	.5221	.3819	.4528	.3614	-.0030	1.0000	.6797
18	.5697	.6544	.6354	.5645	.1323	.1706	.4863	.5134	.2441	.5513	.5885	.5190	.3018	.4278	.3520	-.0356	.6797	1.0000

VARIABLE CODE TO CORRELATION MATRIX FOR MEASURES OF FINAL ACHIEVEMENT IN THIRD GRADE

Variable

University of Pittsburgh Diagnostic Rating of Language Outcomes, 1967

1. Understandings
2. Habits
3. Skills
4. Attitudes

University of Pittsburgh Informal Inventory, 1967

5. Listening Comprehension

San Diego Pupil Inventory

6. Reading Attitudes

Stanford Achievement Tests

7. Word Meaning
8. Paragraph Meaning
9. Science and Social Studies Concepts
10. Spelling
11. Word Study Skills
12. Language
13. Arithmetic Computation
14. Arithmetic Concepts

CORRELATION MATRIX FOR MEASURES OF FINAL ACHIEVEMENT IN THIRD GRADE

Var.	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	1.0000	.8211	.8378	.8595	.2807	.2255	.5066	.5126	.4053	.3462	.4173	.4694	.2009	.3131
2	.8211	1.0000	.8491	.8167	.1707	.2857	.4314	.5030	.2993	.3870	.3867	.4497	.2351	.3158
3	.8378	.8491	1.0000	.8624	.2942	.2557	.5607	.5862	.4464	.4876	.4246	.5114	.2235	.4293
4	.8595	.8167	.8624	1.0000	.2650	.2064	.4767	.5052	.3946	.3494	.3495	.3985	.1397	.2846
5	.2807	.1707	.2942	.2650	1.0000	.1129	.4624	.4410	.5374	.1837	.2302	.4275	.2628	.4013
6	.2255	.2857	.2447	.2064	.1129	1.0000	.1677	.2205	.0801	.2472	.1020	.1741	.1303	.1469
7	.5066	.4314	.5607	.4767	.4624	.1677	1.0000	.7050	.6234	.5669	.5663	.6982	.3106	.4439
8	.5126	.5030	.5862	.5052	.4410	.2205	.7050	1.0000	.5697	.6031	.5755	.6940	.4195	.4941
9	.4053	.2993	.4464	.3946	.5374	.0801	.6234	.5697	1.0000	.3175	.4900	.6301	.3181	.4201
10	.3462	.3870	.4876	.3494	.1837	.2472	.5669	.6031	.3175	1.0000	.5701	.5852	.4351	.5829
11	.4173	.3867	.4246	.3495	.2302	.1020	.5663	.5755	.4900	.5701	1.0000	.7245	.4359	.3967
12	.4694	.4497	.5114	.3985	.4275	.1741	.6982	.6940	.6301	.5852	.7245	1.0000	.5018	.5354
13	.2009	.2351	.2235	.1397	.2628	.1303	.3106	.4195	.3181	.4351	.4359	.5018	1.0000	.5323
14	.3131	.3158	.4293	.2846	.4013	.1469	.4439	.4941	.4201	.5829	.3967	.5354	.5323	1.0000

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DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
OFFICE OF EDUCATION

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PERSONAL AUTHOR(S)

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ABSTRACT

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The major purpose of this continuation of U.S.O.E. Project 2729 from Grade One was to examine the extended effects and outcomes of two instructional approaches, the Coordinated Basal Language Arts Approach and the Integrated Experience Approach to Communication, on pupils' language development in second grade and subsequently third grade. The extended study included a population of 396 second graders, 351 of these then continuing to third grades in three socio-economic environmental stratifications within the City of Pittsburgh.

Second and third grade teachers who participated were assigned at random to the instructional methods and can be described in the teaching competencies as representing a range from inadequate to superior. Inservice education workshops were held for teachers in both approaches to acquaint them with research controls, diagnostic assessment of pupils, the respective approaches to be employed, and instructional materials to be used with their pupils. More specifically, teachers employing a Coordinated Basal Language Arts Approach followed instructional techniques suggested in teacher's manuals for the Scott Foresman "Listen, Speak, and Write" language arts program and the Scott Foresman Multi-Ethnic Basal Reading Program. Teachers who employed the Integrated Experience Approach to Communication were provided with spiral curricular guides, prepared by Vilscek and Morgan, that served as sources of instructional suggestions.

A "2 x 3 x 2" factorial design was employed to test the effects of Socio-economic Levels, Methods, Sex, Mental Age Levels, and Interactions. An examination of findings revealed that at the close of second grade, pupils taught through an Integrated Experience Approach had statistically significantly higher achievement than pupils in the Coordinated Basal Language Arts Approach in ten criterion variables related to language achievement. At the close of the third year, no significant differences in achievements between pupils in the two approaches were noted except on measures of creative thinking, oral reading and creative writing. At second and third grade levels significant differences were isolated between Socio-economic Levels, Mental Age Levels, and Sexes.